THE ARCHITECT & BUILDING NEWS

6 DECEMBER 1956 · VOL. 210 · NO. 23 · ONE SHILLING WEEKLY

- GEORGE ANGUS FACTORY
- AN EXERCISE IN MODULAR CO-ORDINATION
- INFORMATION DIGEST

PUBLISHED IN LONDON SINCE 1854

WHERE SIMPLE OR COMPLICATED SCHEMES OF VENTILATION ARE INSTALLED, AND THE OPERATION IS REQUIRED, BY REMOTE CONTROL OR OTHERWISE, AND THE WINDOWS HAVE ANY OF THE FOLLOWING CHARACTERISTICS :—

- **OPENING OUTWARDS**
- **OPENING INWARDS**
- **TOP HUNG**
- **HORIZONTAL CENTRE-HUNG**
- **BOTTOM HUNG**
- **VERTICAL PIVOT HUNG**
- **SIDE HUNG**
- **HORIZONTAL SLIDING**
- **VERTICAL SLIDING**

The illustration shows One Set of Electrically operated Twin Tension Rod Gear with Counter-Balance Unit operating one continuous opening light, 74' 0" long x 5' 0" deep. Note the Spiral Balance Wheel fitted at the end Sprocket.

Barry's Heavy Ruboleum

MONARCH OF THE LINOLEUM WORLD SINCE 1907

Reproduction of a RUBOLEUM Floor in a Food Store

HEAVY RUBOLEUM is a superfine linoleum 6.70 mm. thick (approx. $\frac{1}{4}$"), was first produced by us in 1907, and still holds its position of the highest merit as a floorcovering because of its properties of hygiene, resilience, durability and decorative colourings.

HEAVY RUBOLEUM is produced in 35 beautiful and popular colours, plain and marble effects.

HEAVY RUBOLEUM is especially produced for use on Ship decks and Public buildings. It is available through high-class retail Furnishers and Contract Flooring Specialists.

HEAVY RUBOLEUM is the solution to your flooring problems.

SAMPLES ON APPLICATION TO THE EXCLUSIVE MANUFACTURERS

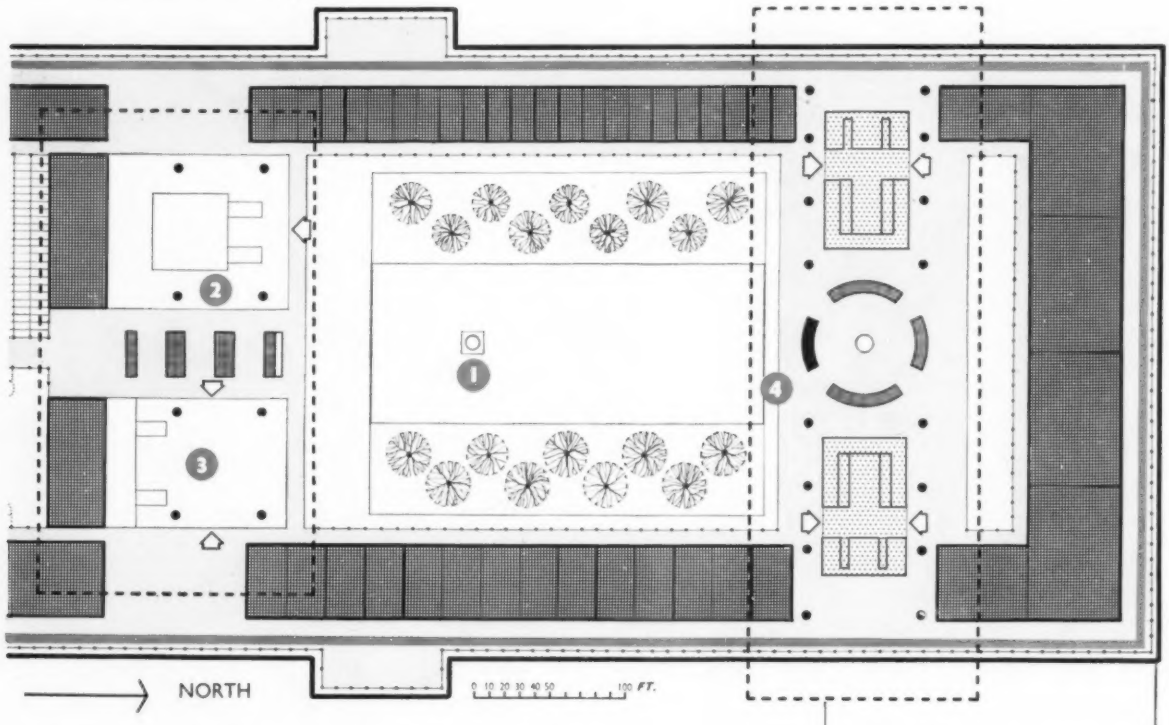
BARRY, OSTLERE & SHEPHERD, LTD

KIRKCALDY ● SCOTLAND

A

The Glass Age Development Committee

This is the final report issued by the Glass Age Development Committee on "The High Market Project". The previous reports have been published in the form of advertisements throughout this year. The Committee was convened by Pilkington Brothers Limited and has made these detailed proposals for a possible large scale shopping centre, which could be situated in the Black Country area. The Committee consists of G. A. Jellicoe, F.R.I.B.A., Edward D. Mills, F.R.I.B.A., and Ove Arup & Partners, and the project has been designed, under the direction of the Committee, by Gordon and Eleanor Michell, A/A.R.I.B.A.



THE HIGH MARKET 7

THE MAIN SQUARE

On the north side, the Main Square is bounded by a six-floor Department Store: on the south by a building that accommodates a cinema and a restaurant. Open arcades, with single-storey shops continue on either side, and these arcades may be enclosed during the winter with removable glazed screens: the whole shopping area would then be air-conditioned. The larger shops at the north end of the building could accommodate administrative offices, a Post Office and Banks.

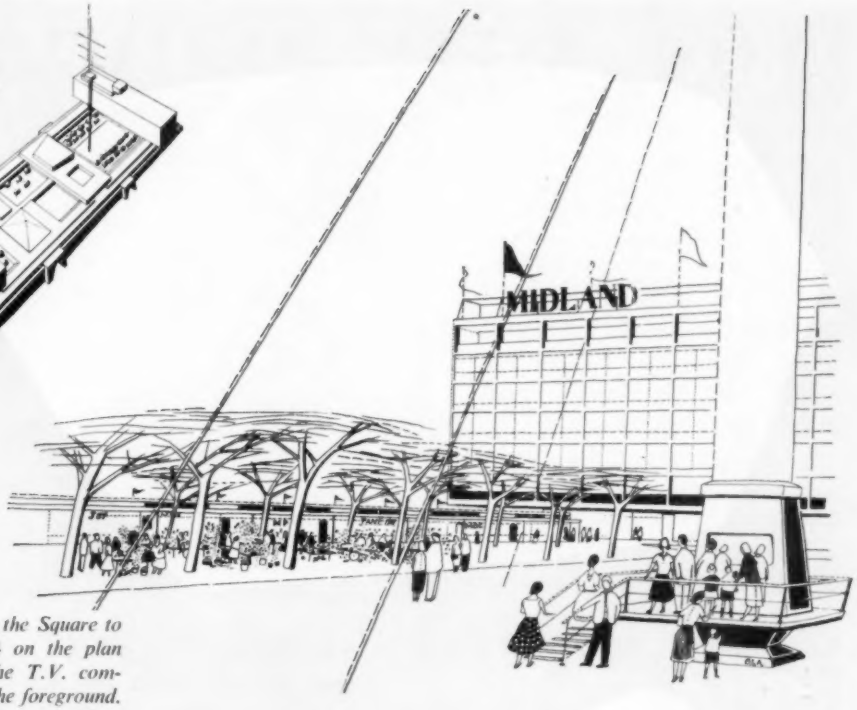
1. *Television communication unit*
2. *Stairs to cinema with illuminated aquarium under large half landing*
3. *Exhibition hall with stairs to restaurant, ballroom and administration offices*
4. *Department Store above*

KEY TO TINTS ON PLAN

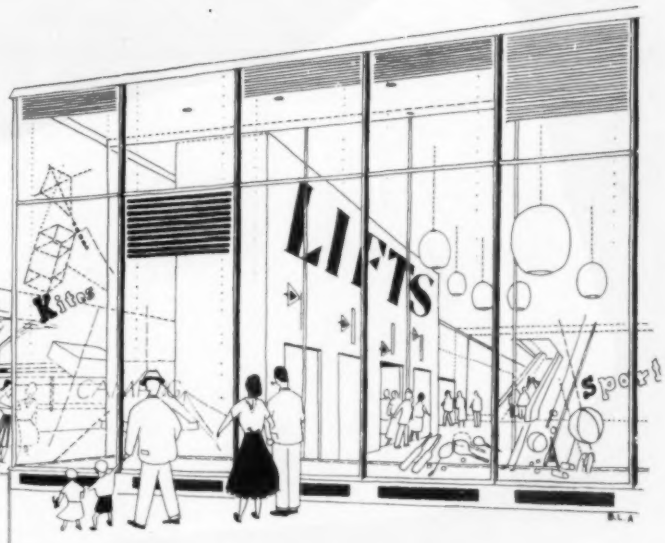
- *Covered shopping area*
- *Single-storey Shops*
- *Shoppers' lifts from car parks*
- *Moving articulated platforms*
- *Goods lifts*
- *Entrance to Department Store with lifts, escalators and display space. Dotted lines represent Department Store above*

PILKINGTON BROTHERS

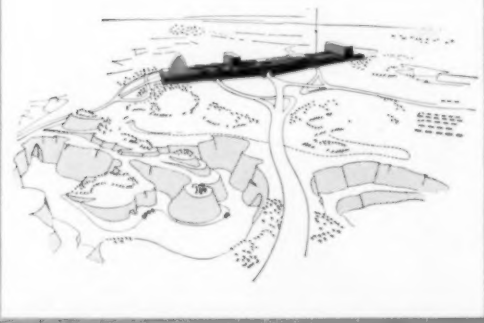
GENERAL VIEW OF PROJECT



View looking north across the Square to the Department Store (4 on the plan opposite). The base of the T.V. communication unit is seen in the foreground. This has a revolving periscope with a public viewing panel in which the whole of the surrounding country may be seen (No. 1 on the plan opposite). The centre of the Square is a few feet below the area of the arcades and on the ramped areas on both sides is a double row of trees with flower stalls and seats beneath them.



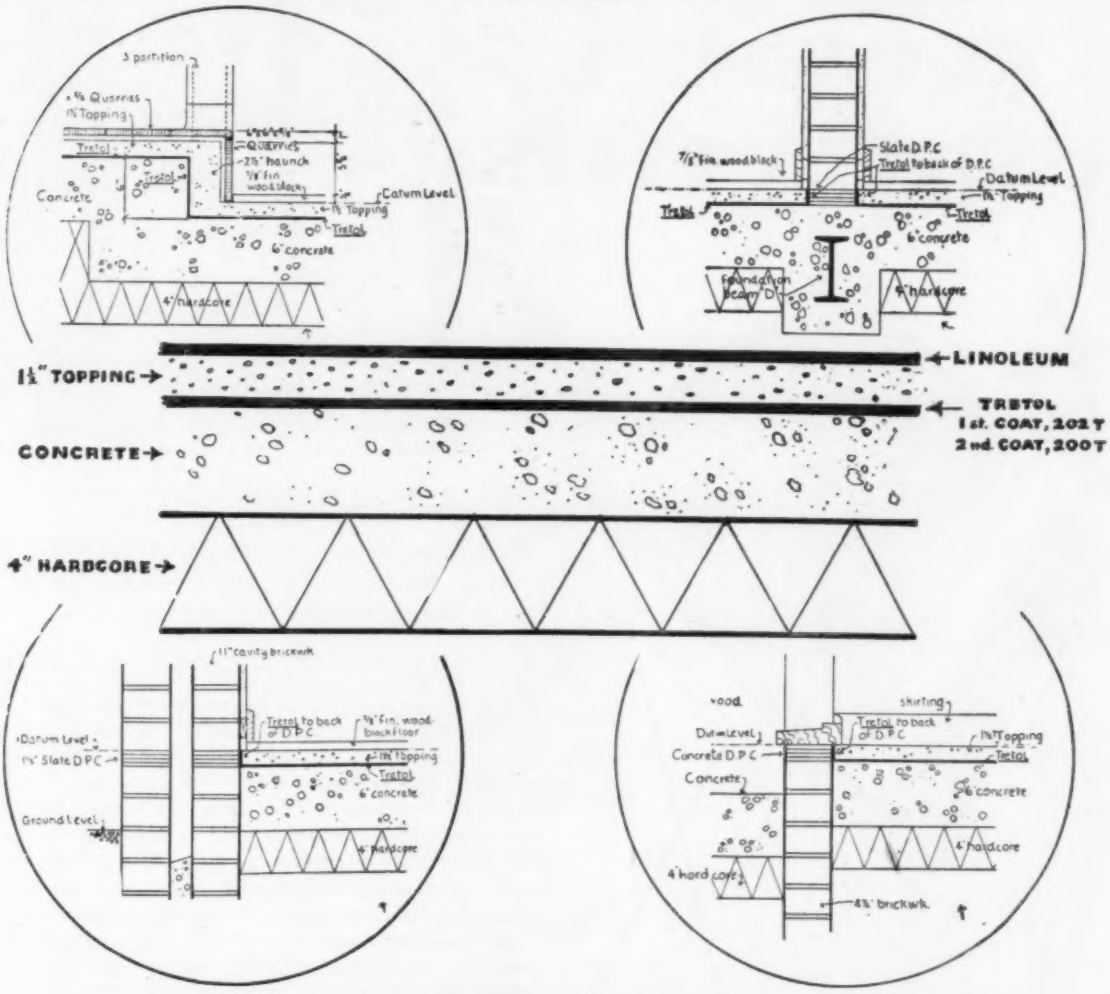
The glazed entrance area of the Department Store. Through the display windows the lifts and escalators may be seen (No. 4 on the plan opposite).



Reduced bird's eye view of the area and site of the project.

TRETOL SPECIFICATION SHEETS, No. 1 **For Your Files**

BITUMEN MEMBRANES IN SOLID CONCRETE FLOORS



Where ground floors are to receive a floor covering, the use of a continuous Bitumen Membrane is essential. Not only is this necessary to prevent dampness, but also rising moisture *vapour*, the latter being injurious to most types of floor covering and to health.

Not always appreciated, but perhaps of major importance, is the fact that **dry floors are warm floors.** Keep dampness well away from the final screed, and a valuable contribution is immediately made to better thermal insulation in domestic dwellings.

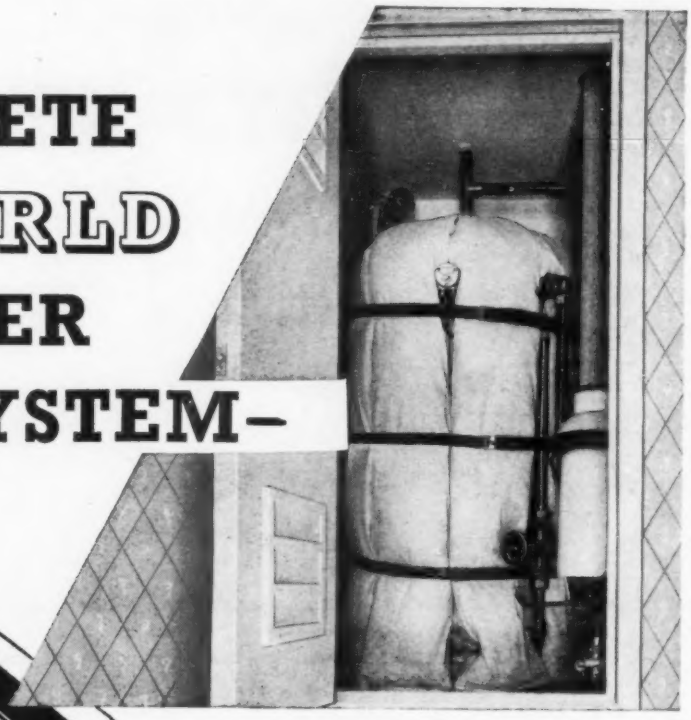
Tretol Pure Bitumen Solutions Nos. 202T and 200T applied COLD as first and second coats, have been used on many hundreds of thousands of houses under this specification by housing authorities throughout the country.

Write for D.P.C. Membrane Specification T.D.S.MJ

TRETOL LIMITED

TRETOL HOUSE, THE HYDE, LONDON, N.W.9. Tel.: COLindale 7223 (10 lines)

A COMPLETE NEW WORLD HOT WATER SUPPLY SYSTEM—



The universal demand for a complete hot water service which is reasonably priced, easily fitted and economical to use, has turned the attention of Architects and Municipal Authorities to the NEW WORLD Gas Storage Systems.

As an example, the **NEW WORLD** C.12.S. or the larger C.28 Circulator, fitted to a lagged cylinder of suitable size, is available for use in an airing cupboard. With the Economy Valve the user has the choice of heating 4 gallons for the sink and wash basin or 20 gallons when a bath is required. The temperature of the water is automatically controlled by the Regulo. This installation is being extensively used in new houses and flats, and for the modernising and conversion of old property.

A similar type of installation is available for accommodation under the draining board in the kitchen, where if ventilation is adequate no flue is needed. When the house contains no ball valve cistern, a combination unit complete with cistern mounted on the cylinder can be supplied. The **NEW WORLD** Circulator can also be used as an auxiliary to an existing solid fuel system and is available in three sizes, the largest of which is suitable for schools and institutions.

NEW WORLD Storage Water Heaters provide hot water at the same temperature, Summer and Winter alike. They can normally be operated on the existing Gas and Water Services and require a minimum of maintenance.

recommend NEW WORLD PRODUCT OF Radiation Ltd ***gas storage water heaters***

Further information from :
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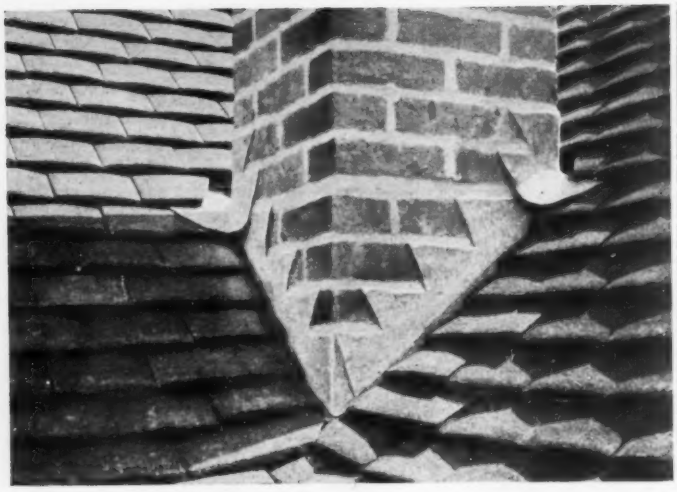
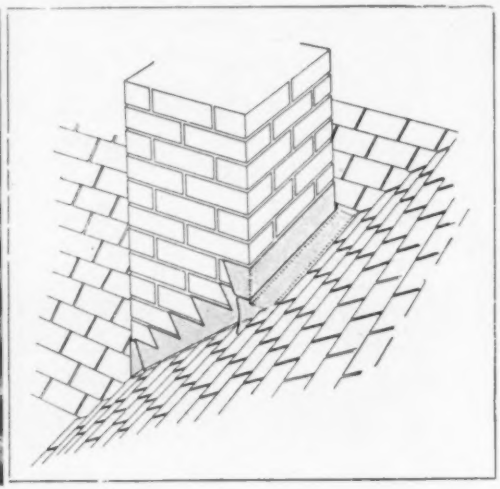
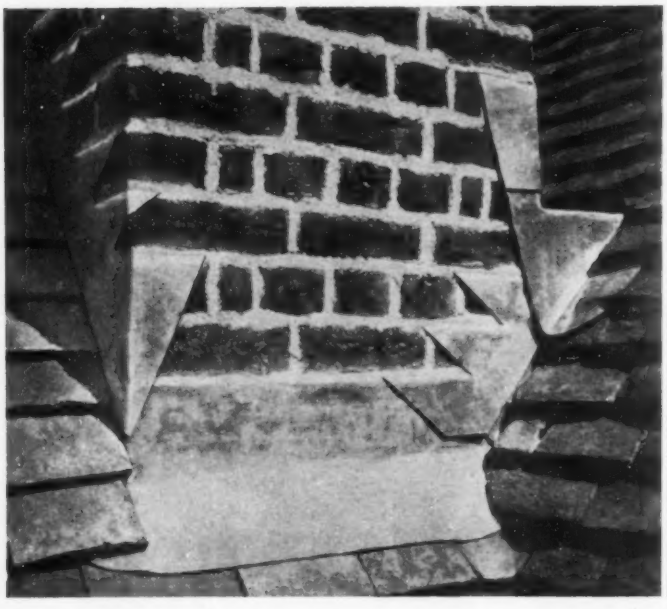
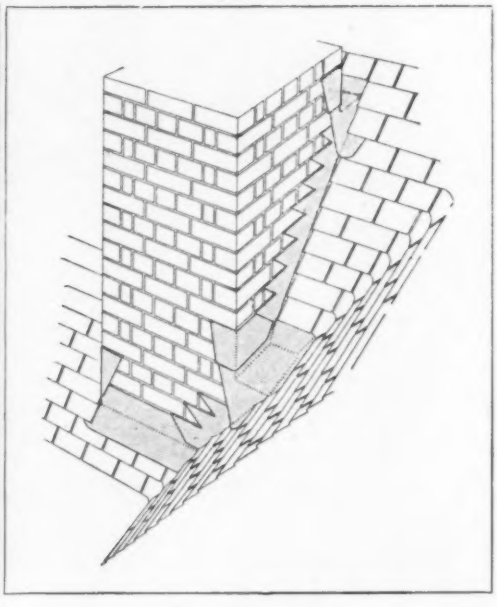
7 Stratford Place, London, W.1 *Phone: MAYfair 6462*





COMPLICATED INTERSECTIONS BETWEEN THE CHIMNEY STACK AND THE PITCHED ROOF PROVIDE NO PROBLEM WHEN THE FLASHINGS ARE IN LEAD





LEAD LASTS

The Council's Technical Information Bureau will gladly help with problems on the use of Lead Sheet and Pipe in building work. Publications that give details of the main uses are freely available. Please state the particular interest when applying for copies.

LEAD SHEET AND PIPE COUNCIL *in association with* LEAD DEVELOPMENT ASSOCIATION

EAGLE HOUSE · JERMYN STREET · LONDON · SW1 *Telegrams:* Ukleadman, Piccy, London *Telephone:* Whitehall 4175

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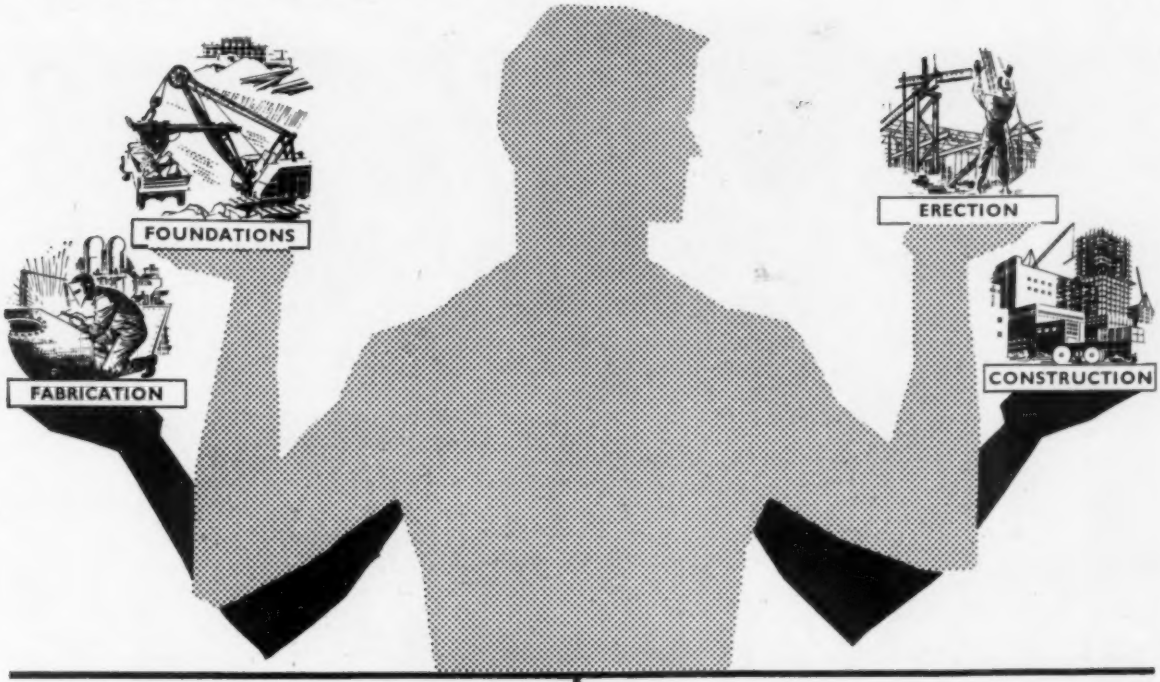

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The S.T.S. engineering service includes steel plate fabrication and erection, structural steelwork, reinforced concrete work, brickwork, and engineering foundations—in fact a complete construction service from drawing board to the completed building.
A highly experienced technical advisory service is immediately available.

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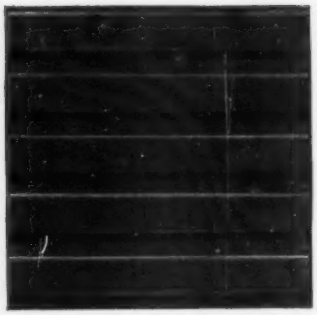
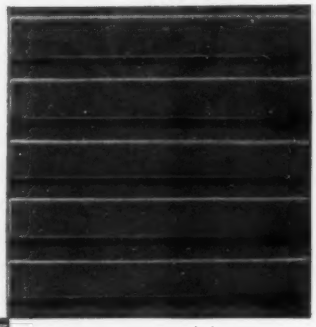
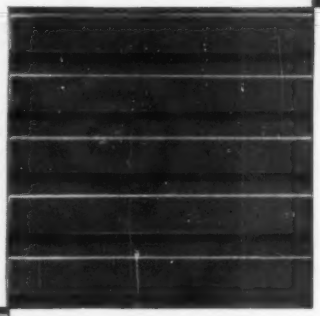


nothing is so quietly reliable as . . .

SUREFOOT
TILES

non-slip, heavy-duty rubber flooring





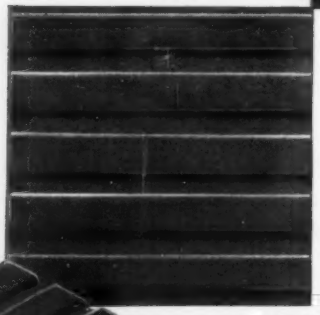
Typical Installations

FACTORIES
Traffic lanes, ramps, store rooms, loading bays.

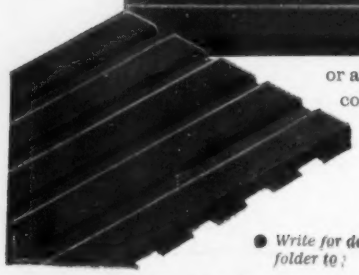
RAILWAY STATIONS
Booking halls, platforms, trucking ways, baggage rooms.

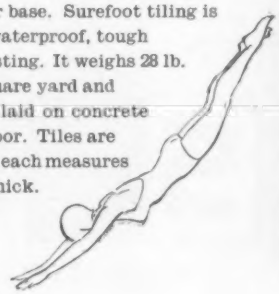
PITHEAD BATHS
Shower and changing rooms.

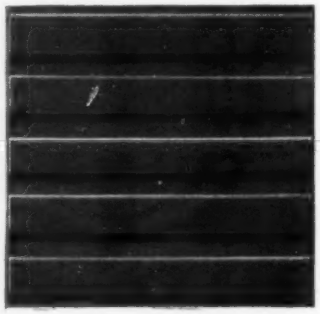
SWIMMING BATHS
Surrounds to pools and changing rooms.



Wet or dry . . . on the level or on the slope . . . Surefoot ribbed-rubber tiles form a robust yet quiet and resilient anti-skid surface. They may be laid as traffic lanes or as complete floor finishes. Besides being functional, the surface ribbing lends an attractive pattern to the floor. Dovetailed grooves on the underside of each tile ensure a firmly 'locked' setting in the mortar base. Surefoot tiling is fully waterproof, tough and lasting. It weighs 28 lb. per square yard and can be laid on concrete or any similar subfloor. Tiles are coloured black and each measures 18" x 18" x $\frac{7}{16}$" thick.







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SEMTEX LTD
THE FLOORING SPECIALISTS

● *A Dunlop Company*

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HENDON 6543

6 SE. PT. 1

Architects: Edward D. Mills and Partners, F./A./A. R.I.B.A.

New Laboratory at Eastleigh for William Warner & Company Ltd.

The success of this development was the result of complete co-ordination between Building Owner, Architect and Contractor. Good teamwork enabled production to commence twelve months after site clearance started.

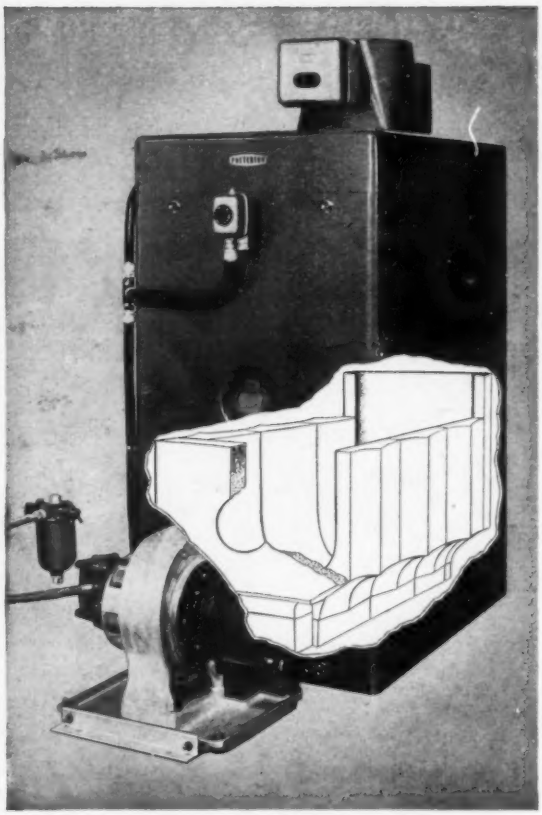
Tailored combustion chamber linings increase efficiency at no extra cost

All DOA Series 'Potterton' Oil-Fired Boiler-Burner Units now include complete sets of pre-formed refractory brickwork. And here are the advantages gained by the new brickwork :

Fewer bricks, each one pre-shaped—thus the time taken to fit the brickwork in the boiler is reduced by up to 50%.

Perfect fit—uniformity in the size and shape of the combustion chamber is guaranteed, minimising the danger of faulty bricking affecting combustion efficiency.

An increase in the operating efficiency of the boilers over the range. DOA boilers are now uprated to 110,000-310,000 B.t.u/hr. compared with 108,000-288,000 B.t.u/hr.



In effect a price reduction

In keeping with the Company's policy of price stabilization, the prices of the 'Potterton' Oil-Fired Boiler-Burner Units remain unchanged. However, the lower fixing costs of the new brickwork together with the higher ratings and the newly introduced integral draught stabilizer, can be taken to represent a substantial price reduction.

New ratings of DOA Series		
	B.t.u/hr.	
No. 110	110,000	
No. 150	150,000	*when fitted with 'Selectos' or 'Nu-way' Burners.*
No. 190	190,000	
No. 230	230,000	
No. 270	270,000	
No. 310	310,000	

POTTERTON DE LA RUE

'Potterton' Oil-Fired Boiler-Burner Units give you the most heat from every drop of oil

THOMAS DE LA RUE & CO. LTD. (Potterton Division) 20/30 Buckhold Road, Wandsworth, London S.W.18.

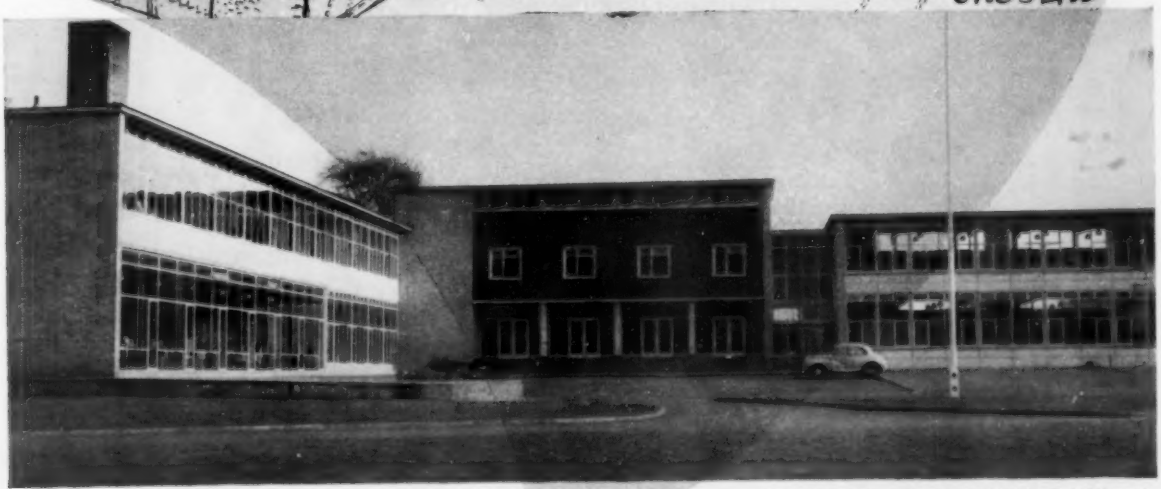
DLR641

SIEGWART

PRECAST FLOORS AND ROOFS

Siegwart beams are precast at Siegwart works under expert supervision and controlled production methods. They are delivered to the site ready for placing straight into their planned positions thus avoiding delays or interference with construction programmes

Eric Hall



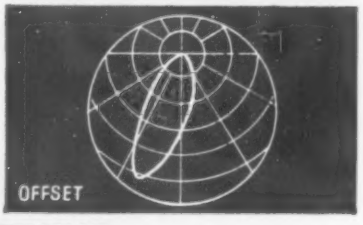
Warwick Beauchamp Secondary School for Girls, Warwick

SIEGWART FLOOR COMPANY LIMITED GABLE HOUSE, 40 HIGH STREET, RICKMANSWORTH, HERTFORDSHIRE AND AT BIRMINGHAM, LEICESTER, MANCHESTER AND GLASGOW

B*

ARCHITECTURAL SCHEMES

A New Lighting Approach



INTENSIVE · CONCENTRATING · OFFSET

A new lighting approach to Architectural schemes has been made possible by the development of a range of Holophane **'LENTILITE'** (Regd.) Circular In-Bilt units which give **Intensive, Concentrating and Offset** light distributions.

The range includes Flush and Semi-recessed units for recessment into the ceiling, and Close-Ceiling units for use where recessment is not possible.

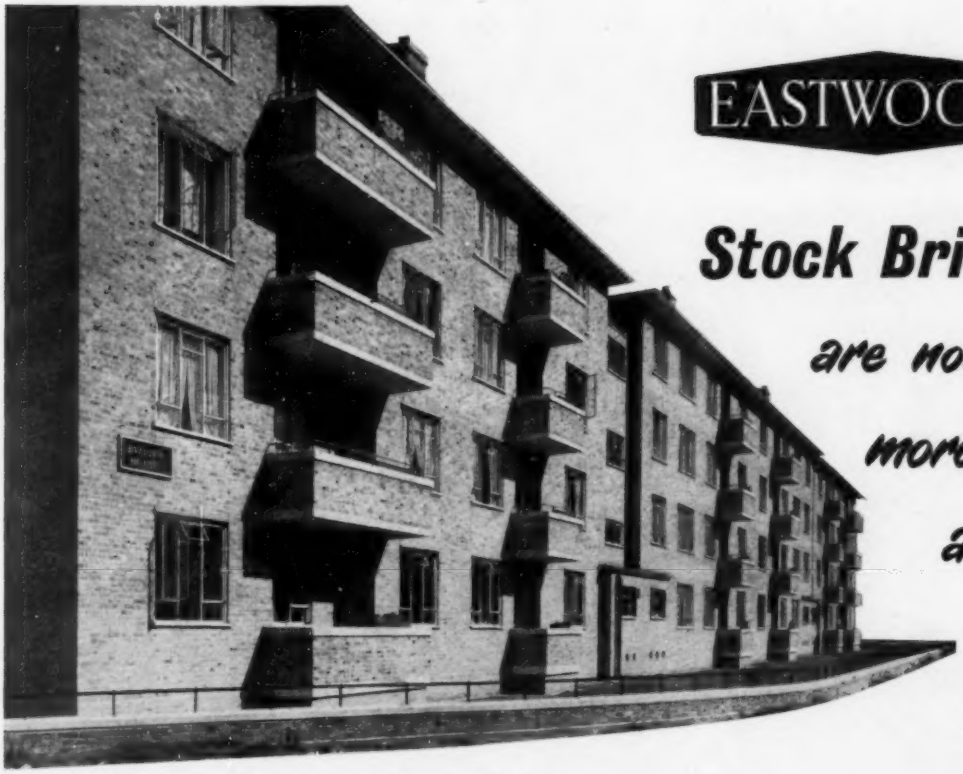
'Lentilite' units give the Architect wide scope for integral design while affording a high standard of light control combined with pleasing appearance. Full details and technical information available on request.

Ask for Publication 55/1.

HOLOPHANE LIMITED

SCIENTIFIC ILLUMINATING ENGINEERS

ELVERTON STREET, WESTMINSTER, LONDON, S.W.1. Phone: VICtoria 8062. Grams: Holophane Sowest London



EASTWOODS

Stock Bricks

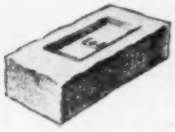
are now

more freely

available

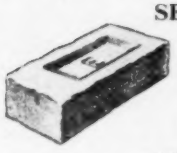
Architect: Victor Wilkins, F.R.I.B.A. Contractor: H. Fairweather & Co. Ltd.

YELLOW FACINGS



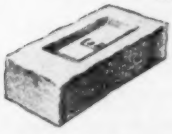
A hard high grade stock facing of uniform deep yellow colour and regular shape.
Their mellow warm colour make these bricks very suitable for special architectural features.

SECOND HARD STOCKS



An economical, reliable and well burned brick of varying colour and slight irregularity in shape, the well-known "London" Stock is in great demand for both facing and foundation work.

MILD STOCK FACINGS



Ideally suited for use as facings for schools, factories and housing schemes, Mild Stocks are fairly hard bricks with faces of good medium yellow colour.
They are of regular shape, fast in colour and strengthen with age.

Prompt Delivery from Works to Your Site

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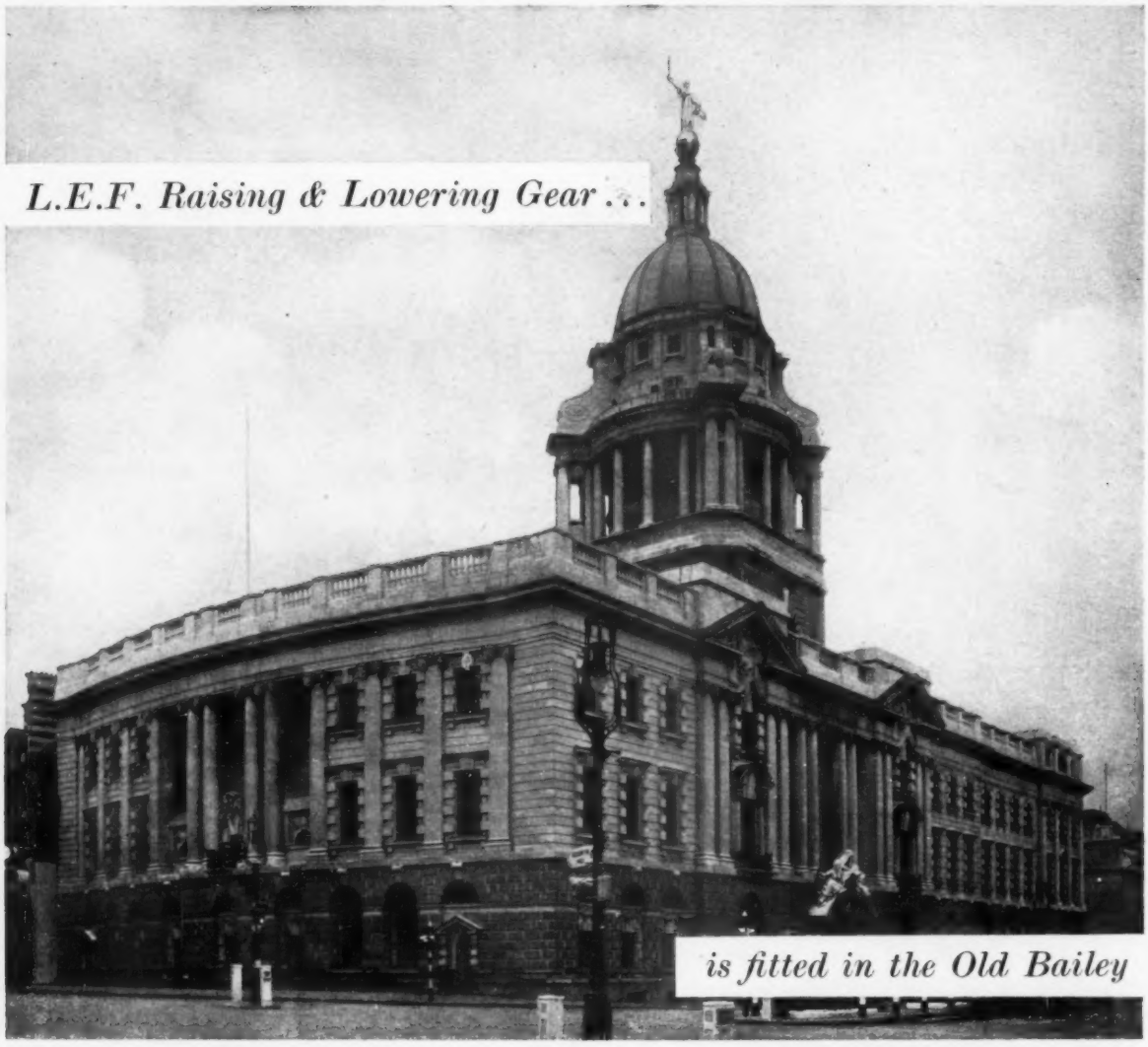
EA8284



IN the Old Bailey, as in many other buildings where servicing out-of-reach lights has presented a problem, L.E.F. Raising and Lowering Gear was specified because it is convenient and enables maintenance time and labour to be kept to a minimum.

The operation of a small Hand Winch breaks electrical contact and smoothly lowers the lighting fitting to the most convenient position for servicing. When the fitting is raised again, electrical contact is re-made and the weight of the fitting is taken by the Contact Suspension Unit itself, thereby removing the weight from the winch rope.

A feature of the Old Bailey installation, which was carried out by H. J. Cash & Co. Ltd., was the extreme accuracy with which the Contact Suspension Units had to be designed and fitted. When raising and lowering the fittings, each of which weighs approximately 1 cwt. and is generally circular in shape, it is essential to avoid fouling the edges of the ceiling aperture, where there is a minimum clearance for the fittings.

Send for illustrated catalogue containing full information of the standard range of L.E.F. Gear.

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LEF

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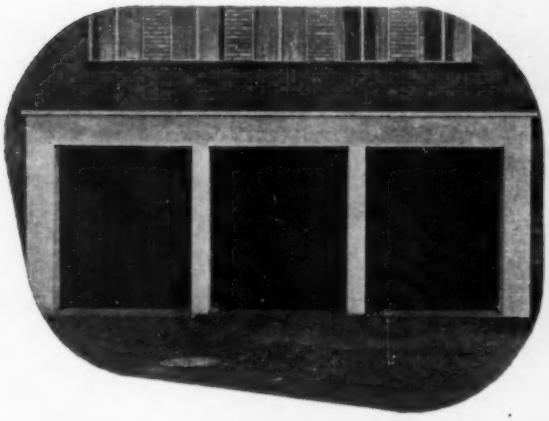
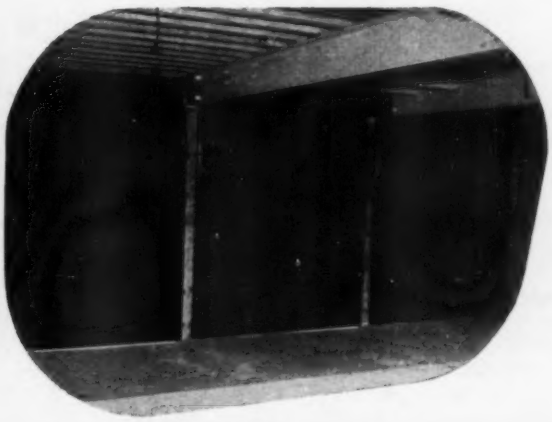
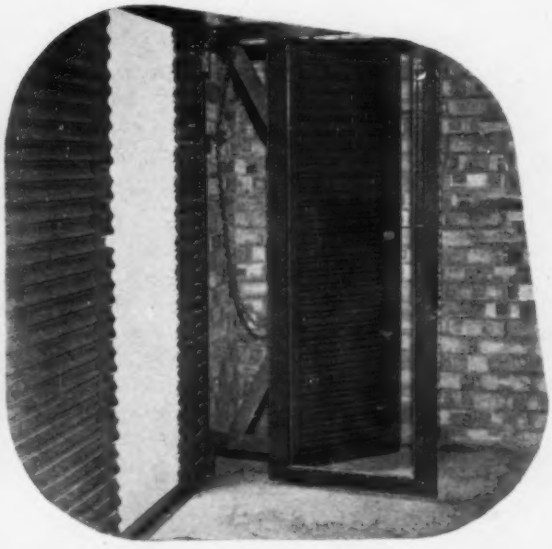
ADAM SHUTTER INSTALLATION







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STEEL ● ALUMINIUM ● SOFT & HARD WOOD
Patent Fireproof Steel Shutters to L.C.C. and other Specifications

Hand operated by long arm. Hand operated by chain and gearing or motorised

An efficient service in design, manufacture, fixing and repair

ADAM LTD

BLIND & SHUTTER DIVISION *of* ADAM & LANE & NEEVE LTD.
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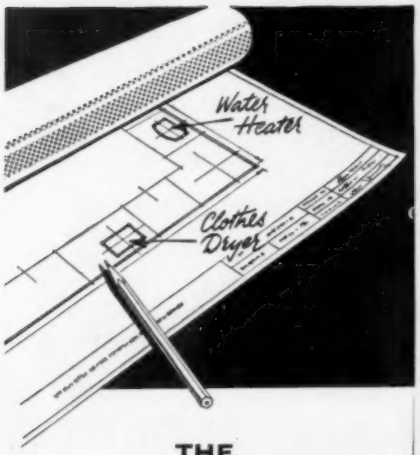
TWO POINTS TO REMEMBER WHEN PLANNING FOR KITCHENS



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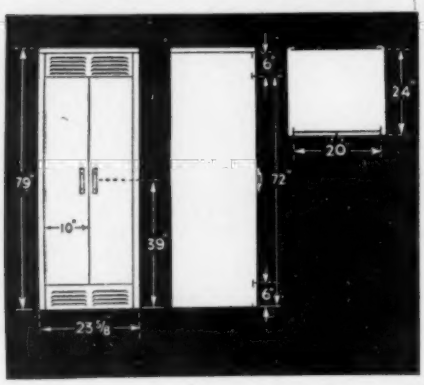
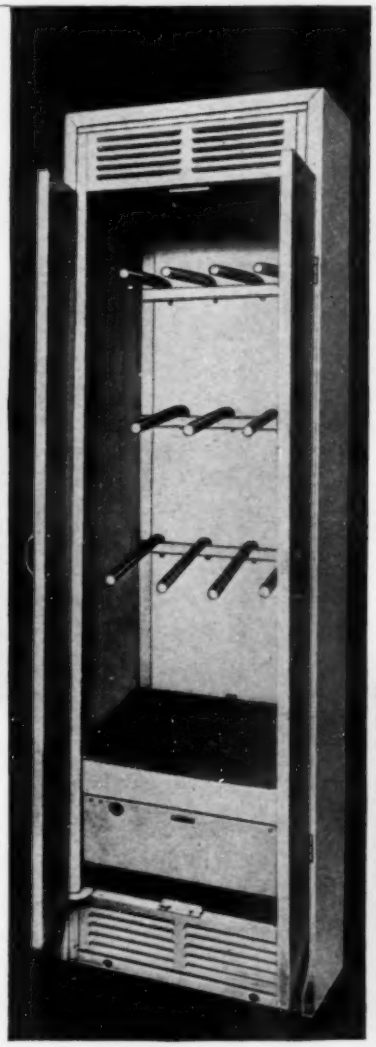


The Flavel 'Suntrap' Clothes Dryer is constructed so that it can be supplied either as a complete unit or, alternatively, for building into a recess or corner by utilising the main frame assembly and such component parts as may be necessary.



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SLIDING DOOR GEAR

Illustration on left shows ELLARD "RADIAL" Sliding Door Gear fitted to a private garage. Sliding doors are of great advantage in protecting cars against damage caused by accidental swinging of hinged doors. In addition, valuable working space is offered where it is most desired at the entrance to the garage. Note also how ELLARD Door Gear provides easy access to and from the garage by a personal entry door. ELLARD "Radial" Sliding Door Gear is low in price and gives long service without maintenance. This gear is also suitable for the larger openings of commercial and industrial garages

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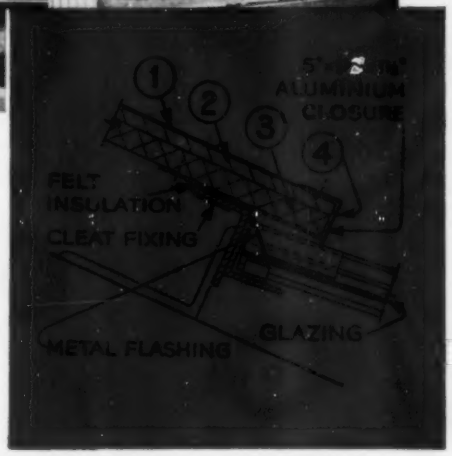
G.E.C. specifies BITUMETAL



Architects: G.E.C., WEMBLEY.

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Vol. 210 No. 23

THE ARCHITECT & BUILDING NEWS

December 6 1956

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THE PRESIDENT'S OVERSEAS TOUR

ABOUT one-sixth of the corporate membership of the R.I.B.A. live and work overseas. To these may be added others, registered as architects under the ordinance in force in their own Commonwealth country, who have a less direct but still real link with the R.I.B.A. through their membership of an Allied Society. It is probable that the grand total of British architects overseas thus falls very little short of the total membership of the R.I.B.A. in the United Kingdom.

Criticism was voiced in this Journal about a year ago that the Institute's attention was focused too narrowly on domestic issues within the United Kingdom. The apparatus through which the wider vision might be attained existed in the system of autonomous Allied Societies throughout the Commonwealth, all of whom were entitled to representation on the Allied Societies' Conference and the five senior having direct representation on the R.I.B.A. Council. This apparatus appeared not to be used to the fullest advantage of which it was capable. The overseas Allied Societies did not seem to make much use of their representation in the governing circles of the Institute, and the R.I.B.A. Council did not appear to concern itself very greatly with matters architectural outside the confines of the United Kingdom.

That this criticism was not altogether just, or there has been a change in outlook, is shown by the announcement recently made of the forthcoming tour by the President, Mr. Kenneth Cross, and the Secretary of the R.I.B.A. to visit Allied Societies in Malaya, Australia, New Zealand and Canada. Such a series of visits can do much good, or very little, depending to a great extent on how they are managed and on the personalities of the visitors.

Obviously the party spirit will be abroad and there will be wining and dining, but this is natural and appropriate, for the Commonwealth Societies will most certainly appreciate the physical effort being made in this extensive travel by Mr. Cross and Mr. Spragg, as much as the attitude of mind in the United Kingdom, which has given rise to the trip. In their turn they will show hospitality and do honour to the President as the representative of United Kingdom architects and their hospitality will be to that extent a compliment to the home country.

The President and Secretary on their tour will be attending the annual convention of the Royal Australian Institute of Architects to be held in Melbourne, the centennial celebration of the American Institute of Architects in Washington and the annual assembly of the Royal Architectural Institute of Canada (which in 1957 celebrates its 50th anniversary) to be held in Ottawa.

All these activities may be regarded as principally social activities, but they will be only the decorative screen behind which the serious work of liaison is being carried on. In regard to the personalities of the ambassadors there need be no fear. Both will carry out their social commitments with the grace which has distinguished them over the years in England. In regard to the more serious work, Mr. Cross has probably more experience of the machinery and background of the R.I.B.A., the constitution of the profession in the United Kingdom and the problems of architectural education than any President for many years past. He has been a Vice-President, Honorary Secretary, Chairman of the Board of Architectural Education and has served on the Registration Council, the Practice and Competitions Committees and numerous others including the liaison committees with surveyors and builders. Mr. Spragg's forty years' experience at the R.I.B.A fits him particularly to advise on the background detail of the several important and difficult questions of policy which are now so pressing that it is obvious that they will be discussed.

The chief matter for settlement between the R.I.B.A. and the Dominion Allied Societies is that known as the

"Devolution Scheme". Under this scheme, instituted in 1930, control of architectural education was delegated to certain Dominion Allied Societies and this included control of the examinations in the Dominion concerned and recognition of school examinations to qualify for the Associateship, R.I.B.A. On the introduction of the United Kingdom Registration Acts subsequently, it was hoped that the Dominion Allied Societies would submit their examinations for statutory recognition so that the principle obtaining in the United Kingdom of keeping qualifications for the Associateship and Registration identical, would be matched in the Dominions. The principle has, however, not been followed with any degree of unanimity. No great embarrassment occurred so long as comparatively few young Dominion architects came to the United Kingdom, nor was the discrepancy very glaring until the introduction of the requirements of practical experience and professional practice examinations.

A second and very similar matter concerns the Colonies, Protectorates and newly constituted Dominions. This is the problem of the recognition of overseas schools of architecture for the purpose of qualifying for the Associateship, R.I.B.A. The essence of it is the unwisdom of forcing students in countries such as the Gold Coast, Hong Kong, the West Indies, etc., to qualify in the detailed application of tradition and techniques used in the United Kingdom, which can never be used in their countries.

It will be seen that a satisfactory solution to both these questions can follow only from a review, for the purpose of confirmation or reversal, of the policy over the past 25 years of keeping qualifications for the Associateship, R.I.B.A. and registration in the United Kingdom identical. The choice would seem to lie between keeping the R.I.B.A. predominantly a United Kingdom Society, consequently with its vision bent inward, and legislating for its expansion into a Commonwealth instrument for the co-ordination of all matters architectural. Whatever the outcome of the review, it will be conducted in the knowledge that most Commonwealth countries now have their own registration ordinances based to a varying extent on local requirements.

There are other and different questions which may be discussed but in their turn each of them are related to the fundamental question of policy. It may well be that the President and Mr. Spragg will be discussing what more can be done in the way of post-graduate study and the exchange of architects between Commonwealth countries and, possibly, the constitutional position of the R.I.B.A. Council in relation to the Dominion Allied Societies. Is a Commonwealth Council for Architecture too great a leap at this early stage?

Whatever the outcome, the importance of the President's tour at this stage cannot be stressed too strongly.

EVENTS AND COMMENTS

NEW ZEALAND HOUSE

My pictures show two schemes by Professor Robert Matthew for the building which is to stand on the site of the Carlton Hotel, that is on the corner of Pall Mall and the Haymarket. The building will, I understand, be fully illustrated in a later issue. There seems to have been a tremendous brouhaha about this building with the L.C.C. (who have no statutory authority as the site belongs to the Commissioners of Crown Lands) the aforesaid Commissioners, the Royal Fine Art Commission, the Ministry of Works, the Ministry of Housing and Local Government, and the Government of New Zealand all joining in to make the architect's life easier. Everything revolves round the central tower and the relationship between its height and the height of the rest of the building. Should it be 237ft or 204ft? Should it be rectangular or L-shaped? What should the site coverage be? The L.C.C. view is 5 to 1, but the R.F.A.C. think it should be less. The second scheme has been prepared in answer to various criticisms, but the New Zealand Government prefers the first scheme. Now who does what?

There is no denying that it will be an important building in a key position. Visible down Northumberland Avenue from the Festival Hall—the view slightly incommoded by Charing Cross railway bridge, and from the western parts of Pall Mall it will also dominate Waterloo Place and be visible from St. James's Park as it overtops Carlton House Terrace—that is what brings in the interest of the M.o.W.

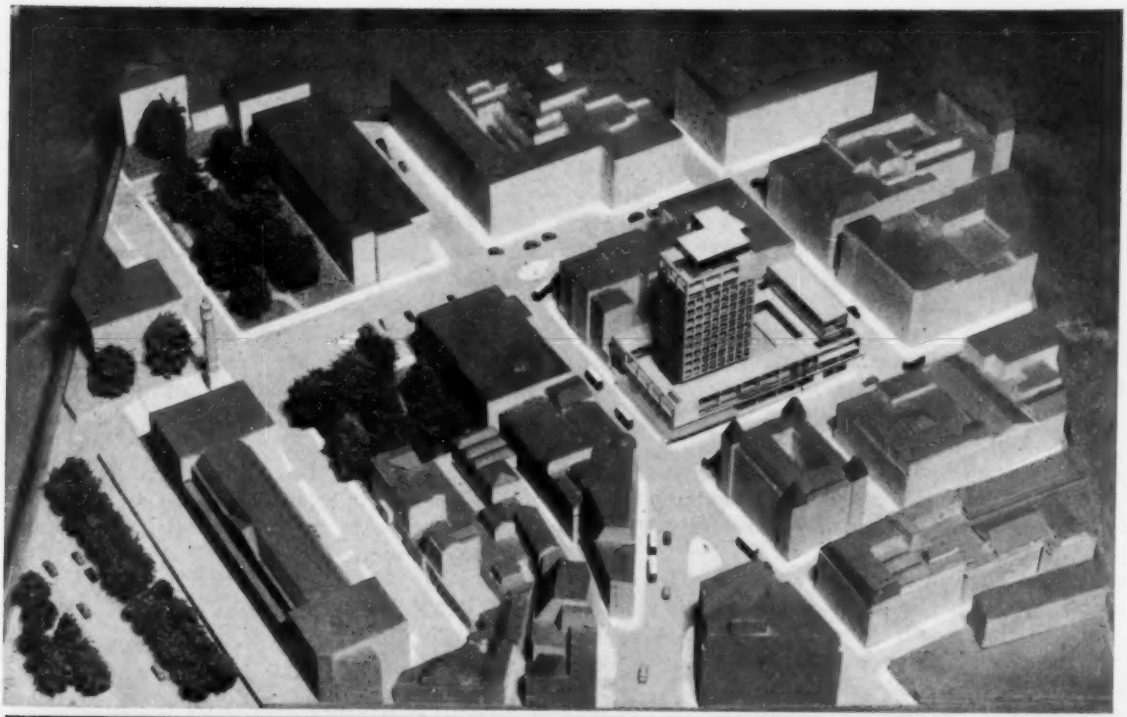
It seems to me that provided it is a good building, and one can reasonably expect that it will be, that is all that matters. We are bound to have more tall buildings in London—we need them to free the ground. Surely it is better to encourage this break with tradition rather than to whittle the architects' ideas away until all that is left is one more slab of cake.

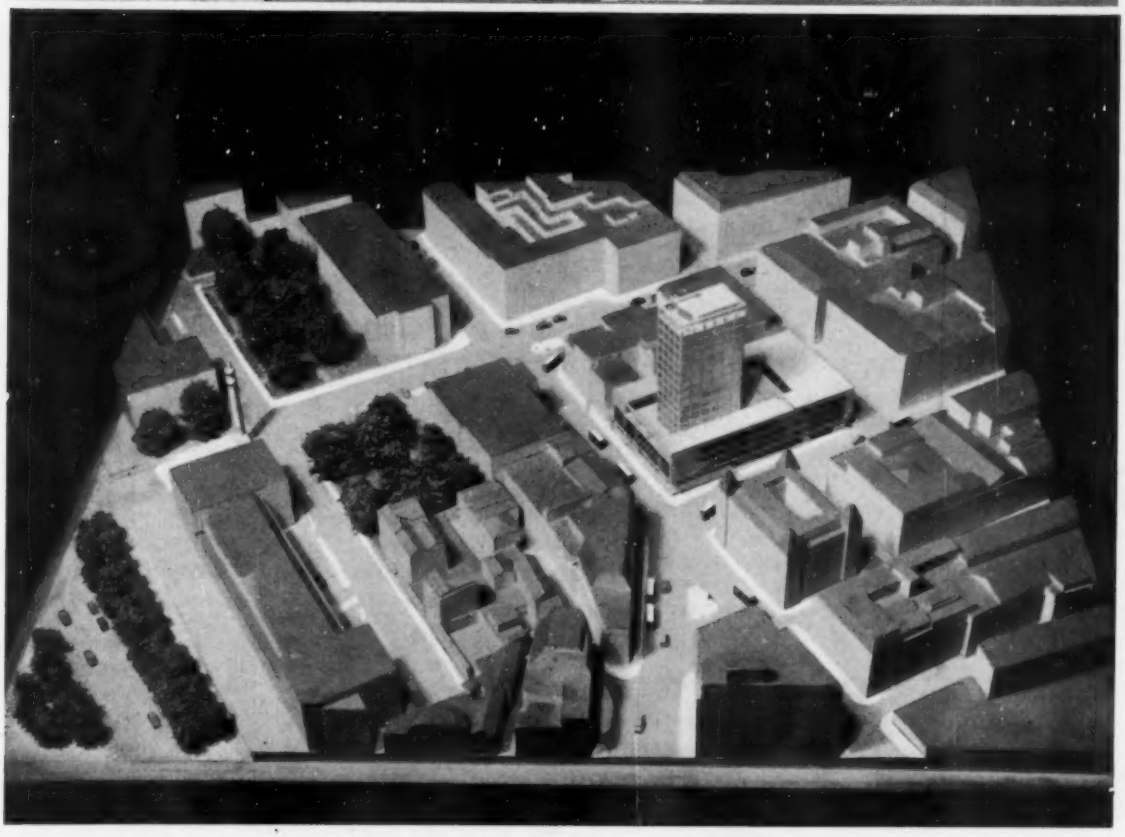
Who is to settle the commotion?

Perhaps Mr. Sandys will have something to say.

AMERICAN SCHOOLS AT THE A.A.

It seemed a very long time since the last American spoke at an ordinary general meeting at the A.A. I think it must have been Kidder Smith, on North Africa, in 1951. It was therefore a particular pleasure to hear Mr. Lawrence (Larry) Perkins, of Perkins & Will, talk about some of his schools, and very delightful these were. Mr. Perkins who, like all good yachtsmen, carries a picture of his ship, a handsome 45ft schooner, along with his family snaps, is a large and warmly friendly man. His manner is quiet, confidential, and rich in intricate English. Not a pin was dropped by his large





DESIGNS FOR NEW ZEALAND HOUSE

The top picture shows Professor Robert Matthew's design for the new building, favoured by the New Zealand Government but which met with objection from the Royal Fine Art Commission. Below is the second design prepared by the architect. This design also has failed to receive the Commission's blessing. The site is where the Carlton Hotel now stands at the corner of Haymarket and Pall Mall. The view is from Trafalgar Square looking down Cockspur Street. See Abner's comment and news note. Further details next week

audience in his hour-and-half talk. One or two British school architects to whom I spoke afterwards seemed to think that Mr. Perkins had nothing to teach them except perhaps how to obtain more money to spend on their jobs. I thought that nearly all the interiors were admirable, and I was much impressed by Mr. Perkins' kindly and humorous approach. No doubt the fact that he has four children helped to develop this side of his character. He described how U.S. educational authorities were revolutionizing secondary school education because they had suddenly realized that hitherto their system had consisted largely of "processing animate meat, not unkindly".

Mr. Perkins' talk was most interesting, and an insight into the, to us, largely unknown American educational system. Among many interesting points of planning were the special entrance arrangements to cope with large numbers of children arriving by car or in the school bus. A feature of nearly all the schools was the system of encouraging children to work by showing them the fascinating things they could do later on if they made the grade. For example, in one school the library for older children had windows on to the main corridor. In another the science laboratories could be seen from a main concourse. This idea of "selling" education to children kept on cropping up in Mr. Perkins' talk.

I particularly liked Mr. Perkins' word "babyshed", used to describe a residential area feeding a school with children.

Mr. Denis Clarke Hall proposing the vote of thanks pleaded with British authorities for more time for the architect, and Mr. Anthony Part, of the M.o.E., a personal friend of Mr. Perkins, drew attention to the very great benefits to be obtained from a visit to the Perkins' residence in Chicago.

Talking boats with Mr. Perkins I discovered that Chicago yachtsmen are known as "drinking water sailors", for on Lake Michigan, provided one is far enough from the shore, drinking water for the crew comes from a bucket dropped over the side. For his summer holiday Mr. Perkins usually "bashes" down the lake for three and a half days with a crew drawn from his office while his family motors to the cruising ground in Canadian waters. The office crew returns and the family takes over. It was a pleasant, friendly evening and Anglo-American relations could hardly have been more cordial.

LEADERSHIP AT HAMMERSMITH

Mr. Peter Trench, who presented the prizes at the Hammersmith School of Building and Arts and Crafts, recently said some forthright things about architects, builders and the industry. He attacked snobbery between the professions and commerce in building and had some strong things to say about the relations between men in the office and men on the job in a building firm. He called for a better understanding of the other man's job. Until some form of integrated training for builders and architects was organized Mr. Trench thought that schools like Hammersmith, where the various different branches of building education were housed under one roof, should give every encouragement to their students to exchange ideas.

Mr. Trench suggested that the big building concern of the future might well be run by two Joint Managing Directors, one a builder and the other an architect. The purpose of this being to ensure that the builders in board room and office talked the same language as the independent architect. Mr. Trench was careful to say that he did not propose that the design and erection of buildings should be controlled by the building company.

This seems to me to be a good idea, but the law will have to be altered before it can be put into effect. Unless, of course, the architect managing directors were prepared to forego their professional title.

MODERN ITALIAN ART AT THE TATE

The current Arts Council exhibition at the Tate is of paintings and sculpture from the collection of Mr. Erick Estorick. The exhibition traces the development of the modern movement in Italy during the past forty years. Since the paintings all come from a private collection it has, as Mr. Philip James writes in a foreword to the catalogue, a flavour of a personal choice. But it is none the less interesting on that account.

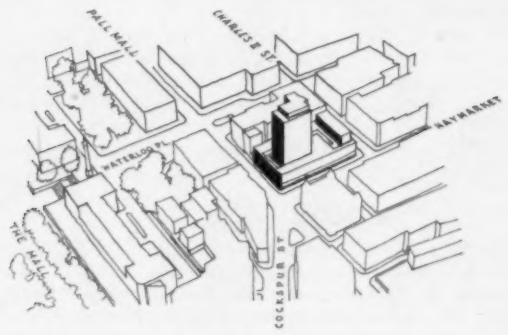
There are certainly some jolly odd things in the exhibition and some terrifying ones as well. For example, the Idolo Moderno, by Umberto Boccioni, painted in 1911. This is both odd and terrifying and shows a staring female face under a vast summer hat seen through what appears to be a burst of rockets. There are some fine Modiglianis and a number of very pleasant paintings all with the title Moltiplicazione, by Mario Sironi. I would describe these as storage rack paintings, and I wonder whether it was Sironi who influenced this branch of modern Italian furniture.

Mr. Estorick clearly has a great liking for the work of Massimo Campigli, and twelve of his paintings are shown. I found them the most satisfying in the exhibition with their faded etruscan colours, their quiet-faced women, their crowd scenes and their curious architecture.

MOLIERE IN LONDON

The exquisite acting of the Madelaine Renaud-Jean-Louis Barrault company in Moliéres Le Misanthrope is not for comment here but I mention it because the setting in a panelled salon of the period was contrived with walls having the appearance of a blown-up black and white engraving. All were quite flat but were surmounted by a three-dimensional frieze which, with the costumes, provided all the colour that was required for a brilliant production.

ABNER



Site of the proposed New Zealand House

Correspondence

Solid Fuel Appliances

Sir,—Abner's report on the recent B.C. Forum on Door and Window Furniture, "Architect and Building News", November 22, prompts me to inquire whether some future Forum could be devoted to free standing space heating stoves. British manufacturers are producing well-designed and highly efficient cookers and water heaters, most of which are slick and streamlined in their appearance. But I wonder why the free standing space heater has received so little attention from designers.

In a recent television interview on Woman's Hour, Lady Isobel Barnett made some very trenchant criticism of the appearance of these stoves, and few would question the truth of her remarks. I would like the manufacturers to tell us when we can have free standing space heating stoves which (1) do not look as though they are a relic of Edwardian times rehashed in new colours; (2) use glass instead of mica for windows; (3) embody thermostatic control; (4) can be used with oil as an alternative to solid fuel.

I suppose that the shape of the fire-box has something to do with it, but I cannot see why these stoves must be about twice as high as they are wide. Having experienced the comfort and economy of a free standing space heater in my own home, I am sure that they would become much more popular if the manufacturers could design something in keeping with the proportions of Modern living-rooms.

Yours, etc.,

H. S. L. KNIGHT

"Wake Up" Birmingham

Sir,—Whilst much appreciating your mention of the bouquets Dryad Door Furniture received at the Building Centre Forum, I would like to point out an inaccuracy. I did not design "the present range" of Dryad fittings in the thirties, but have gradually built it up since that time. This is what I said, and at the same time stressed the point that some of the simple "fitness for purpose" designs of the early thirties are still as fresh and acceptable today as when first produced.

If I may add one further comment: there is ample scope for original design in door and window fittings without copying continental designs whose present competition should act as a healthy stimulant to all who are trying to raise the general standard.

Yours, etc.,

ROGER PEACH, *Director*,

Dryad Metal Works Ltd.

NEWS

Unfair to New Zealand

At a press conference last week were released details of a quite extraordinary muddle over the proposals for a new New Zealand House in London.

In 1948, with the express purpose of building new premises to serve as High Commissioner's offices and home-from-home for New Zealanders in London, the New Zealand Government purchased, on a 99 years' lease from the Commissioners of Crown Lands, the site of the old Carlton Hotel and Her Majesty's Theatre at the corner of Haymarket and Pall Mall.

Professor Robert Matthew was appointed architect, and a design, comprising two contrasting elements, a broad low base and a slender tower of offices, estimated to cost upwards of £2,000,000, was approved by the New Zealand Government who are anxious to press forward in 1957 with that part of the scheme on the Carlton Hotel site; Her Majesty's Theatre not being available until 1970.

As ground landlords the proposed building has to be approved by the Commissioners of Crown Lands. In the terms of the lease the New Zealand Government is also obliged to consult the Royal Fine Art Commission and the L.C.C. and Minister of H. & L.G.; although development by the Crown is not subject to planning legislation.

The Crown Commissioners and the Royal Fine Art Commission were both approached informally for their views on the scheme.

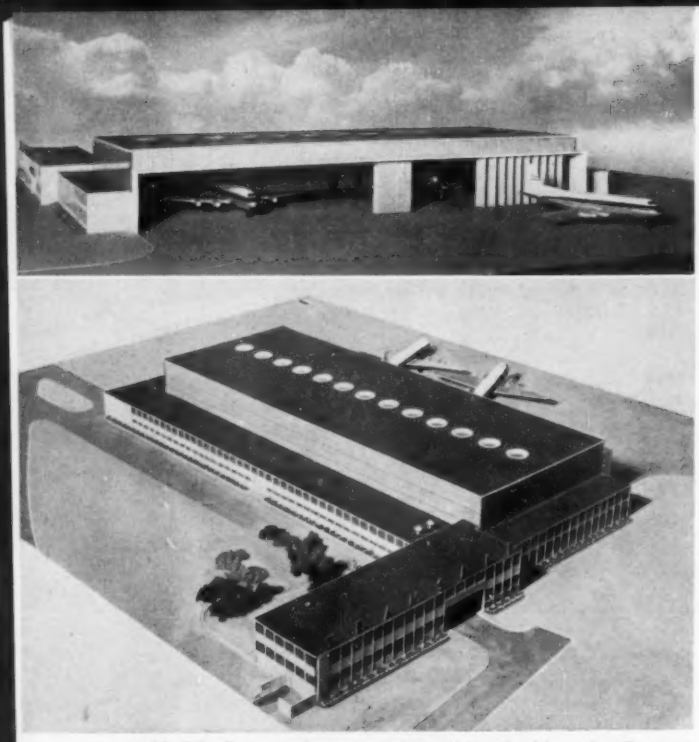
The Royal Fine Art Commission gave their opinion that, "this was not considered an appropriate site for any form of tower". The Crown Commissioners sought the advice of a panel (Sir Howard Robertson, Sir Edward Gillett and Mr. Anthony Minoprio) who were unable to recommend that, "if the scheme were submitted, it should be approved". The New Zealand Government were invited by the Commission to submit an alternative design, which they were informed might "be in the contemporary idiom with a tower, but paying due regard to the scale, the main architectural lines and the materials of the adjacent buildings".

A second scheme was produced by Professor Matthew taking account of the opinions expressed by the Royal Fine Art Commission, but still with a tower block somewhat reduced in height, and this was submitted formally to the Commission in October.

The Commission were still not satisfied, and considered that the scheme, "though an improvement, would still be extremely damaging to its surroundings. . . . The tower would over top neighbouring buildings and be clearly visible and look quite incongruous from St. James's Park and from the Mall, the Capital's Great Processional Way". In the Commission's opinion the scheme attempted to provide too much accommodation on the site. The Commission's main recommendation was for a reduction in the height of the tower by about four storeys, which might be permitted by reconsidering the planning of the main block to contain more office accommodation.

The New Zealand Government purchased the site on the understanding that a 5:1 plot development ratio was applicable to the site. This ratio has been agreed by the L.C.C. and has not been exceeded in the scheme.

The New Zealand Government's stated aim has been "to make the best possible contribution to London's architecture". Professor Matthew was appointed architect after consultation with the British Government, and because they felt that his previous experience as architect to the L.C.C. made him well aware of London's architectural heritage, good and bad. The New Zealand Government



Model of a new hangar and auxiliary building for Transair Limited to be erected at Gatwick Airport by Sir Alfred McAlpine & Son Ltd. Architects, Clive Pascall and Peter Watson. Engineer, A. J. Harris

have said that they "hope to avoid the mediocre compromise that has all to often resulted from a desire to placate every shade of opinion". Furthermore, the High Commissioner has stated, on behalf of his Government, that if the Royal Fine Art Commission's views were adopted it would effectedly veto the construction on the site of any building that could meet the requirements of New Zealand.

B.I.F. 1957

The British Industries Fair will be held in May next year entirely at Castle Bromwich, Birmingham. The Birmingham Chamber of Commerce have organized the heavy industries part of the B.I.F. at Birmingham since it started in 1920, and now that the Government have withdrawn financial backing from the London section they are taking over the whole show.

Many manufacturers are becoming disturbed at the time and resources spent in exhibiting at the growing number of specialized exhibitions, and the decision to continue the fair at Birmingham was only taken on the strength of strong requests from manufacturers to continue with this one general exhibition of the year. The Birmingham Chamber of Commerce have 60 acres of ground at Castle Bromwich, and they have built there specially for the B.I.F. a hall which is the largest of its kind in the world. The 1957 B.I.F. is encouraged by the Government as a means of promoting exports, and it is also being backed by the Federation of British Industries, the National Union of Manufacturers, the Association of British Chambers of Commerce and the Trades Union Congress.

L.M.B.A. Notes

Mr. Iain Macleod, M.P., Minister of Labour and National Service, is to be the guest of honour of the L.M.B.A. at a luncheon in the Park Lane Hotel on Tuesday, January 22, 1957, on the occasion of its annual general meeting. The President, Mr. Kenneth C. F. Foster, will preside.

Winner of the new L.M.B.A. silver medal, offered for the best student in the City and Guilds of London Institute's Technical Teacher's Training Certificate examination, teaching or intending to teach building subjects, is Mr. Frank Vickers, of Liverpool, who is at present teaching in Mount Street Institute of Further Education, Liverpool. With the medal goes a cash prize of £25.

Training for Management

In view of the increasing importance of the subject, the L.M.B.A. is organizing two residential week-end courses in Training for Management early next year. They are to be held at Sundridge Park, Bromley, from January 31 to February 2 and from March 20 to March 22.

Studies in management subjects are becoming increasingly recognized in building as in every other industry as an important factor in raising industrial efficiency, and bodies like the British Association of Commercial and Industrial Education and the British Institute of Management periodically organize residential courses. Some of them have been attended by individual members of the L.M.B.A., who have reported very favourably on their value. It is largely in response to their representations that the L.M.B.A. courses are being arranged. They are believed to be the first in the London Region with a purely building background. If successful they are likely to be made a regular feature of the L.M.B.A. year.

T. and C.P.A. Conference

The Town and Country Planning Association held their National Conference—"Key Points in Planning"—at County Hall, London, last Thursday and Friday.

The Conference was opened by the Rt. Hon. Duncan Sandys, M.P., Minister of Housing and Local Government, and was attended by 500 delegates—mostly representatives of local authorities. Papers were read by Henry Wells, Chairman of the Hemel Hempstead Development Corporation, Lord Chorley, and Sir Frederic Osborn, Chairman of the Executive of the Town and Country Planning Association. On the afternoon of the second day there was a Brains Trust, when a panel of four answered a series of questions arising from the papers read at the Conference.

Henry Wells dealt with the economics of redeveloping the centres of towns that have been expanded, showing from the experience of Hemel Hempstead that town centre redevelopment can be made commercially and financially successful. Lord Chorley spoke about green belts and the necessity for legislation to oblige Local Authorities to establish and maintain them. Sir Frederic Osborn vigorously appealed for greater dispersion, lower densities and fewer flats. This last paper seemed to run against the widely held view that recent development in this country has been too loose and sprawling; that open land is becoming terribly precious and that we have lost sight of the traditional virtues of a town—a compact, completely urban environment with open country near at hand.

Announcement

Paul Mauger & Partners announce that the name of the firm has been changed to Paul Mauger, Gavin, Mathers & Mitchell. The personnel of the firm remains as before: Paul Mauger and George Mathers practising mainly from the firm's office at 31 Church Street, Welwyn, Herts, and Alick Gavin and John Mitchell from the firm's office at 25 Marylebone Road, London, N.W.1.

Law and Administration

A Hole in the Ground

The interpretation of the Building (Safety, Health & Welfare) Regulations, 1948, is a source of almost constant difficulty. A problem as to the application of one of these Regulations was before the Courts in *Knight v. Lambrick Contractors Ltd.* The facts of the case were simple. The contractors were clearing a site for building and, in so doing, were demolishing the remains of a conservatory. The Plaintiff was engaged in this task, with several other workmen, under a foreman. While he was using a sledge hammer to knock down a wall, the ground on which he was standing collapsed, and he fell about eight feet to the bottom of a tank and was injured. In the ensuing action it was found that there was no breach by the contractors of their common law duty. It appeared that the contractors had had no reason to believe that the tank, being completely covered by debris, existed and that it would not have been discovered by reasonable inspection.

The sole question before the Court of Appeal was whether the contractors had committed a breach of Regulation 77 which provides that special precautions shall be taken where there is "an excavation, pit or opening in the ground into or down the side of which a person employed is liable to fall a distance of more than 6 feet 6 inches. . . ." It was argued for the workman that the term "excavation, pit or opening" meant any such hole in the ground whether it was one which was already there or one which was made by the contractor. The Court, however agreed with the contractors' view. Lord Justice Jenkins said that he accepted the view that:

"It was necessary to put some limitation upon this meaning of the words "excavation, pit or opening in the ground". These words surely cannot mean an excavation, pit or opening anywhere and of whatever origin, provided that it is 6 feet 6 inches or more in depth, for then one would be left in complete uncertainty as to the extent of the area surrounding a place where building operations were going on which should properly be termed the site for this purpose."

The Court then went on to say that the limitation must clearly be ascertained by reference to the way in which the Regulations were arranged and divided and to the headings employed. Lord Justice Singleton put the matter in this way:

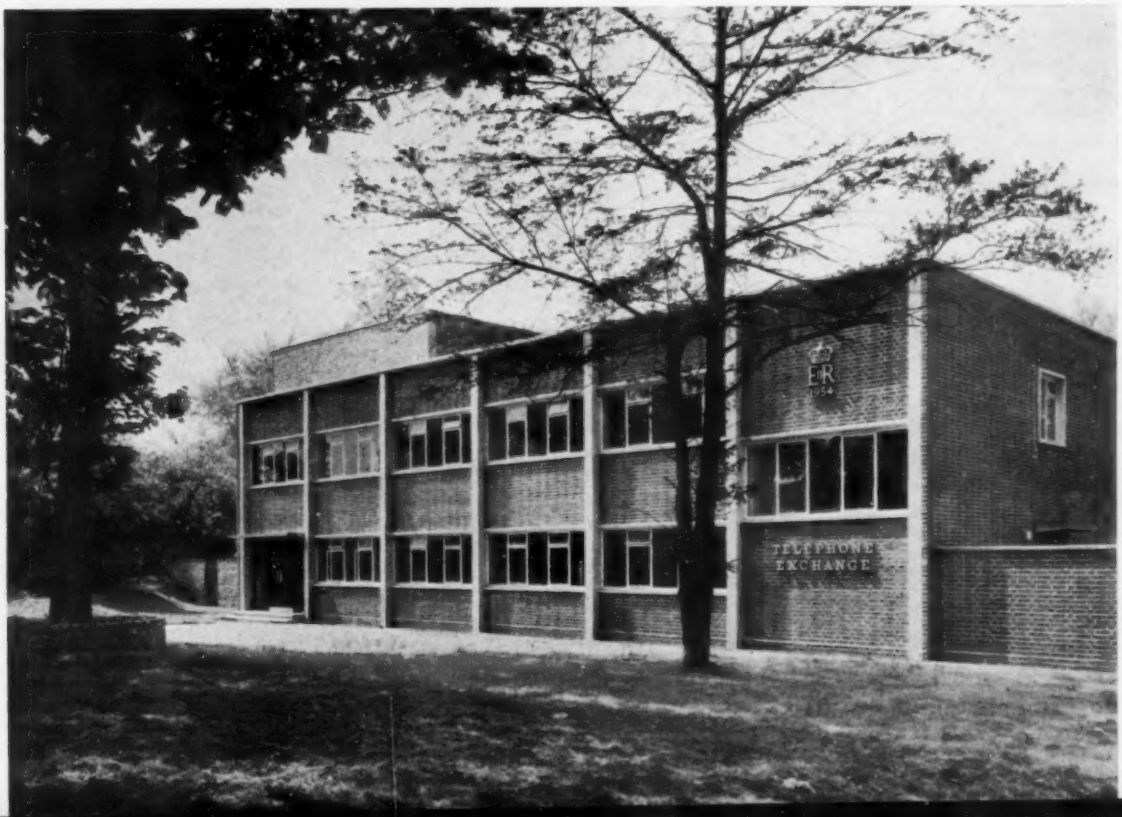
"*In the case of ambiguity* one is, I think, entitled to look at the heading and to hold that these regulations in this Part [of the Regulations] fall under the umbrella of what may be described as the operations of excavators. . . . I am satisfied that in their context the words "excavation or opening" must be confined to excavations, pits or openings *made by the contractor in the course of his work on the site.*"

And this was the view of the other members of the Court. Contractors should, however, be careful to notice that the Court is here saying only that the headings of the regulations could be used to interpret the regulations when there was *ambiguity* as to the meaning of a regulation.

Dumping

In the Queen's Speech the Government referred to their intention to introduce this Session legislation "to allow countervailing and anti-dumping duties to be imposed on imported goods". The promised Bill has now been published and is called the *Customs Duties (Dumping and Subsidies) Bill.* The Bill proposes to give new powers to the Board of Trade. These powers will enable the Board to make an order imposing additional customs duties on imported goods provided that the Board is satisfied of two things. These are, first, that the imported

The new automatic telephone exchange, Weybridge, Surrey, which was opened recently when the district went over to the dialling system. Architect: W. S. Frost, Chief Architect, M.o.W. General contractor: Speirs Ltd.



goods have been dumped or subsidized and, secondly, that it is in the national interest to impose the extra duties. Special provisions are included in the Bill to permit allowance for "Drawback" that is to say the repayment of duty paid on the import of "dumped" goods as and when these goods are subsequently exported.

In Parliament

Decorative Art

The Minister of Works was asked by Dr. Stross what were the provisions made for the embellishment of the new district office building in Marylebone, whether this was to be by sculpture or murals, and whether any sculptors or painters had been approached. Mr. P. Buchan-Hepburn told him that the first stage of the building was not planned to start for about two years and it would be at least six months before planning had gone far enough to enable him to make any decision on these questions.

Dr. Stross sought to find in this an assertion that consultations with appropriate painters and sculptors would take place when the time came; and he also asked for a declaration from the Minister that there would always be consideration for the proper embellishment of all Government buildings. Mr. Buchan-Hepburn expressed his sympathy with the desire to provide artistic embellishment for suitable buildings, but added "I must, of course, have regard to the cost". He promised to consider the matter when the plans had reached a suitable stage. Sir Alan Gomme-Duncan had the last word: "Will the Minister take care that the sculpture does not consist entirely of Mongoloid women in an advanced state of elephantiasis?" (November 27.)

Westminster Car Park

The site of the old Westminster Hospital, which at one time was intended for a new Colonial Office building—a project that was deferred last year for reasons of economy—is to be used temporarily as a public car park. The Minister of Works hopes that it will be available for this purpose early in the new year. (November 27.)

University Building

The Chancellor of the Exchequer has been pressed to give details of the increased expenditure on university building, for which authority has been given for work up to £10·4 millions to be started in 1957, £12m in 1958, and £12m in 1959—over and above the expansion of Imperial College. These authorizations mean that the current rate of starts (£4·8m this year) is to be more than doubled.

Mr. Macmillan explained to Mr. Chetwynd that the allocation of these sums by the University Grants Committee was not yet fully settled, but he hoped to make available soon a list of the works costing over £50,000 which it was proposed to start during each of the next three years. The buildings varied greatly in kind, and ranged from libraries, laboratories, and other buildings for teaching and research, to halls of residence and students' amenities. (November 27.)

Helicopter Sites

Mr. Dodds asked the Minister of Transport and Civil Aviation what progress had been made in preparations for utilizing helicopters for inter-city travel; and, in view of the importance of making early decisions with regard to landing sites in London on or in the vicinity of the River Thames, what consideration had been given to this, and with what result. Mr. John Profumo, Parliamentary Secretary, said that little further progress could be made without more knowledge of the operational and economic characteristics of the twin-engined helicopters now under development. The Minister was studying with the chairman of British European Airways how best to obtain this. The South Bank Air Station remained "on call" till the site was required for development, but little use had been made of it since the B.E.A. scheduled service came to an end. A design for a floating platform to accommodate single-engined helicopters had been discussed with the Port of London Authority and the London County Council, but the demand had not justified our putting this costly project in hand. (November 28.)

Coming Events

Cement and Concrete Association

December 11 at 7 p.m. "Plastic Design in Reinforced Concrete," by Professor W. T. Marshall, B.Sc., Ph.D., A.C.G.I., D.I.C., M.I.C.E., M.I.Struct.E., to the Institution of Structural Engineers (Scottish Branch) at the Institution of Engineers and Shipbuilders, 39 Elmbank Crescent, Glasgow.

Royal Institute of British Architects

December 11 at 6 p.m. "The Motor Vehicle and Civic Design," by Professor H. Myles Wright, M.A.(Cantab.), F.R.I.B.A., at 66 Portland Place, W.1.

The Building Centre

December 12 at 12.45 p.m. Lunchtime film show. "More than Meets the Eye," by Peglers Ltd. At 26 Store Street, W.1.

Reinforced Concrete Association

December 12 at 5.30 p.m. A Joint Meeting with The Institution of Structural Engineers. "Concrete Construction in The Soviet Union," by L. J. Murdock, Ph.D., M.Sc., A.M.I.C.E., W. J. Beckwith, D. D. Matthews, M.A., D.Eng., A.M.I.C.E., M.I.Struct.E., and K. M. Wood. At 11 Upper Belgrave Street, S.W.1.

Royal Society of Arts

December 12 at 2.30 p.m. "Science in Kitchen Planning." (Two Papers). By Mrs. M. Wheatcroft, M.A., Chairman of the Research Committee, Council of Scientific Management in the Home, and Miss Joan E. Walley, B.Sc., Senior Lecturer in Household Arts, Queen Elizabeth College. At John Adam Street, Adelphi, W.C.2.

The Royal Institute of Chartered Surveyors

December 13 at 5.45 p.m. "Survey Requirements for Irrigation Projects," by F. S. Hardy, O.B.E., A.M.Inst.C.E. At 12 Great George Street, S.W.1.

Prestressed Concrete Development Group

December 14 at 6 p.m. Paper on "Recent Prestressed Concrete Construction in Belgium" to be given by Professor D. Vandepitte, in the Lecture Theatre of the Institution of Civil Engineers, 5 Great George Street, S.W.1. Tickets from the Secretary, Prestressed Concrete Development Group, Terminal House, Grosvenor Gardens, S.W.1.

Royal Institute of British Architects

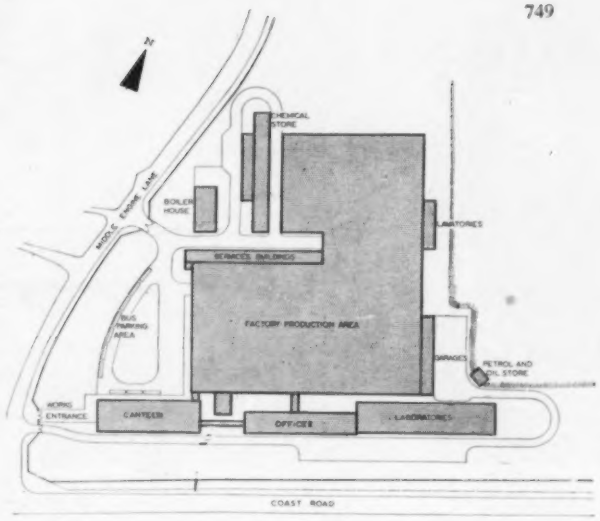
December 10 at 6 p.m. Library Group Meeting. Miss Ida Darlington, M.A., F.L.A., will speak about Peter Thompson, the pseudo Hollar. At 66 Portland Place, W.1.

FACTORY FOR GEORGE ANGUS & CO.

Architects : *Newcastle*
S. W. MILLBURN & PARTNERS

THIS is the story of a three-quarter-million-pound contract built at speed and completed on time. A new factory was required to house the planned expansion of the Oil Seals Division of George Angus & Company. The design brief included the provision of a factory of some 160,000 sq ft, a canteen and factory administration block, an office block and a large amount of laboratory space. There were two essential considerations : one, that the factory should be in production at the earliest possible date, and two, that the cost must be kept to a minimum.

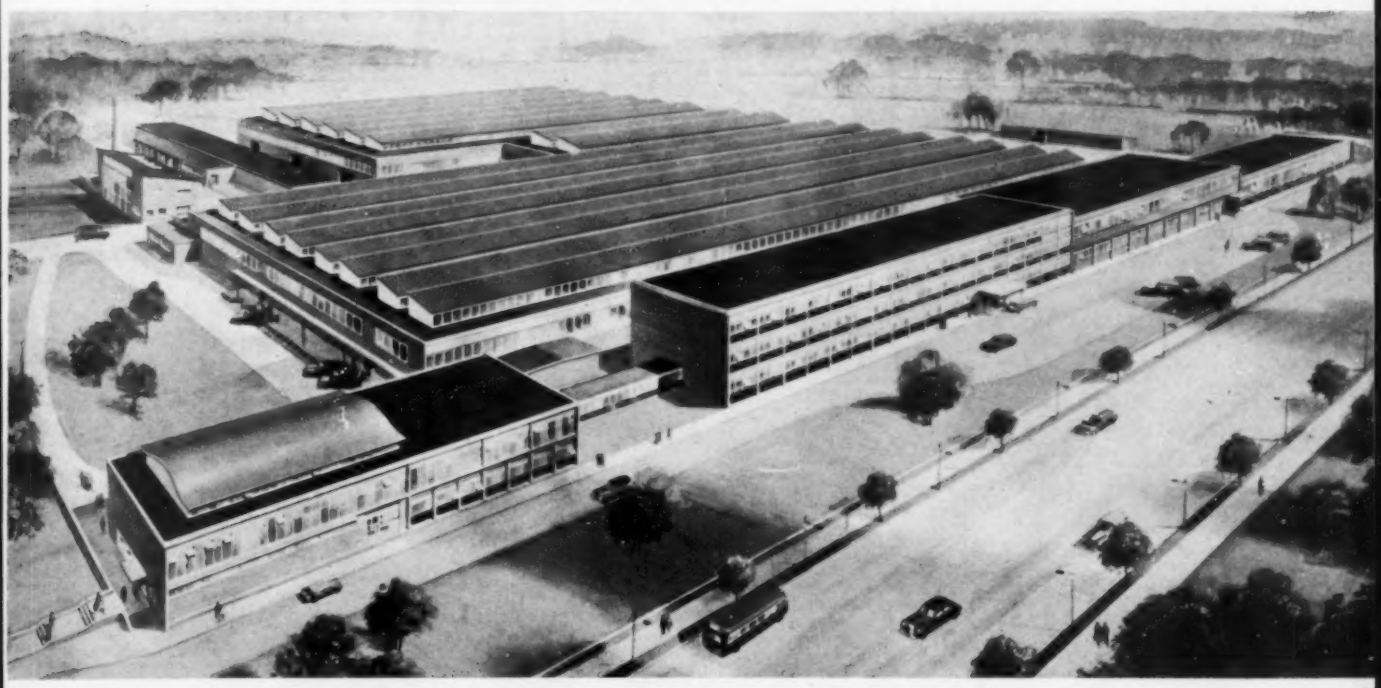
For these reasons it was decided that the factory should be built under a fee contract rather than the contractor chosen by competitive tender. Bovis Limited were approached, and after discussion with the clients and the architects, undertook the contract. As speed was of the essence, work was started almost at once, in mid-April 1955. By June 1956, some 15 months later, the client's plant was beginning to be installed in the factory, and production commenced in the next month. Occupation of the offices and canteen block began in early September and the contract was completed by the end of that month as originally planned; it was formally opened by the Home Secretary on October 18, 1956.



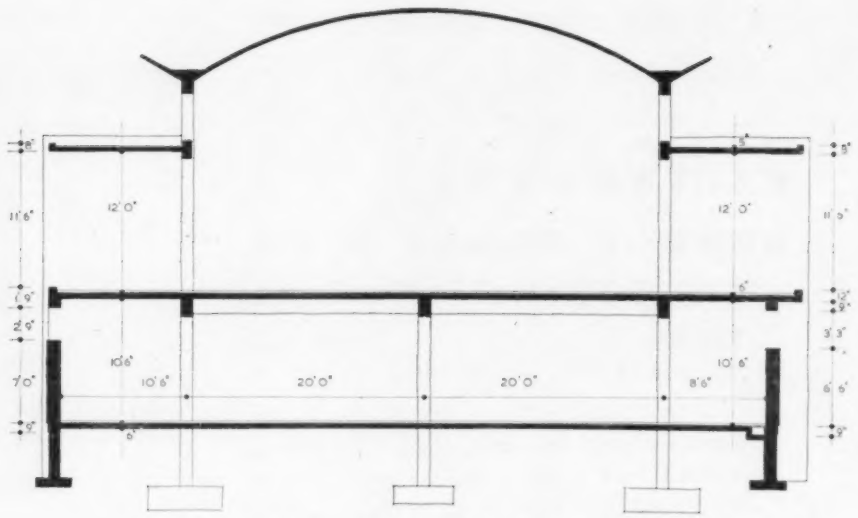
Planning the Contract

Although it is obvious that the time available for preplanning is reduced by an earlier start, Bovis consider, and found on this contract, that a great deal of planning should be done if the project is to run smoothly, finish to programme, and cost as little as possible. Thus in mid-April 1955 when work on the site began, planning was a major consideration of the contract manager and his staff. By a series of meetings

An aerial perspective from the south of the whole layout



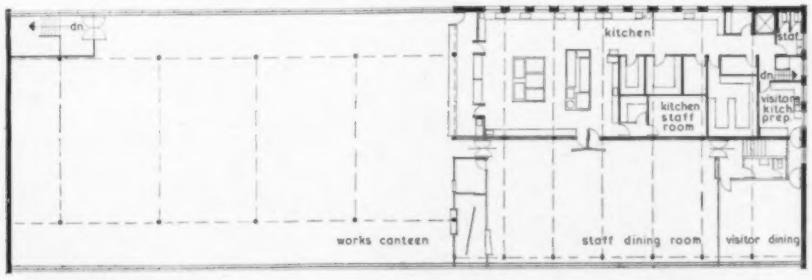
GEORGE ANGUS FACTORY



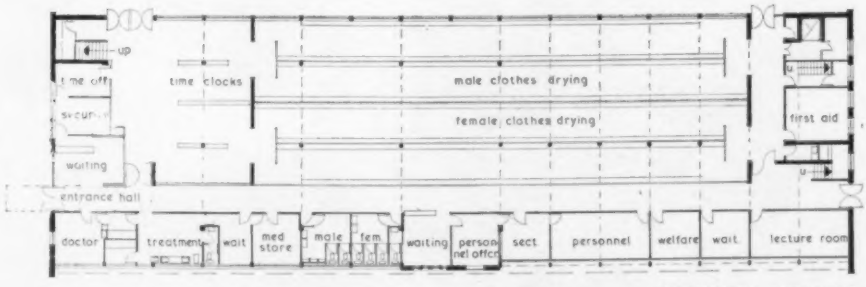
SECTION THROUGH CANTEEN SCALE: 1 IN = 14FT

with client and architect it was possible on April 24 to prepare two programmes, one covering the whole job in outline and the other the works up to D.P.C. level, in detail. The overall programme was planned round the steel erection period, which had already been fixed by obtaining preliminary quotations from a number of steel fabricators and erectors, and choosing that which offered, at a reasonable cost, the quickest delivery. It is of interest to note that the date decided upon for completion at that time on outline information only, was adhered to 18 months later.

In order to make sure of meeting the section completion dates within the overall programme with any degree of certainty the next stage was the selection of suppliers and sub-contractors who had the capacity to achieve those dates. In consultation with the architects a preliminary selection was made and investigations carried out on the ability of each to do their part of the job on time. This involved in some cases actually progressing the work through a sub-contractor's works. If, as was often the case, there was a lack of definite information as to the work to be carried out by the sub-contractor, preliminary bookings of capacity were made and as soon as information came through, detailed specifications sent out for tendering. Similar action was taken with regard to material supplies, every effort being made to ensure that no outside influence would slow up the work. Gradually the gaps in the information were filled in and at the end of four months in August 1955 it was possible to make out an overall programme which could be relied upon in detail. By October this programme had been broken down

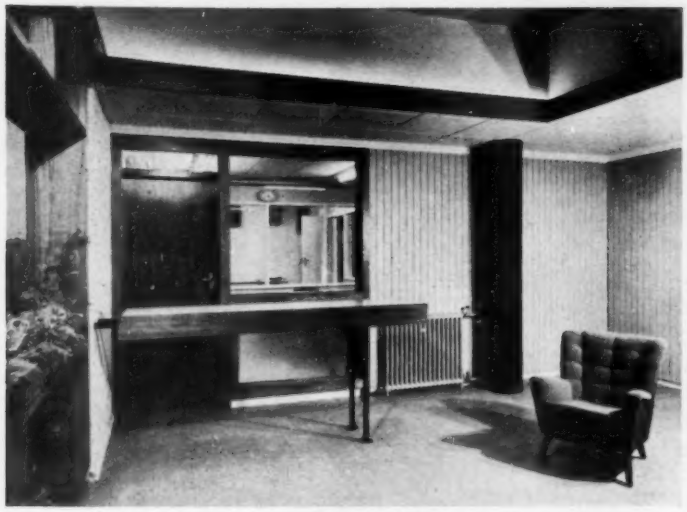


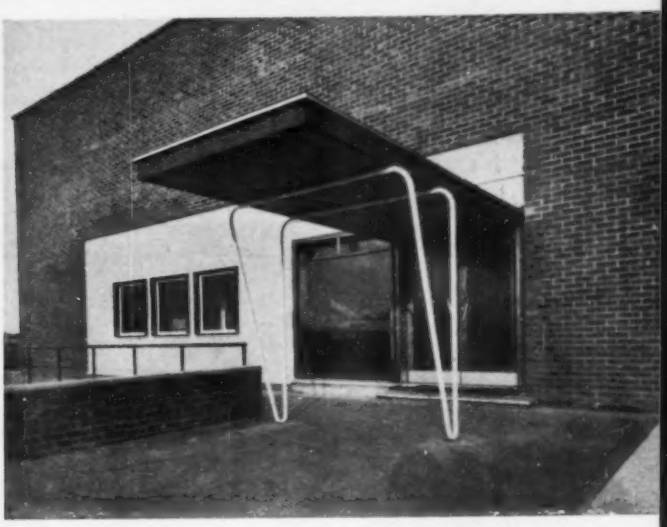
PLAN SCALE: 1 IN = 40FT FIRST FLOOR



GROUND FLOOR

Top of the page, section through the canteen block showing the concrete shell roof. Right, ground and first floor plans of the canteen block showing the facilities on the ground floor for clocking-in, clothes-drying, welfare, and security





Above left, a waiting area in the personnel department. Above right, the works entrance

into highly detailed sectional programmes which underwent final revision in March 1956.

During the early discussion of the programme some major changes were made in order to speed up the building process; for instance one of the major blocks housing the canteen and factory administration offices was designed in concrete, while the others, housing offices and laboratories, and the factory building are steel framed.

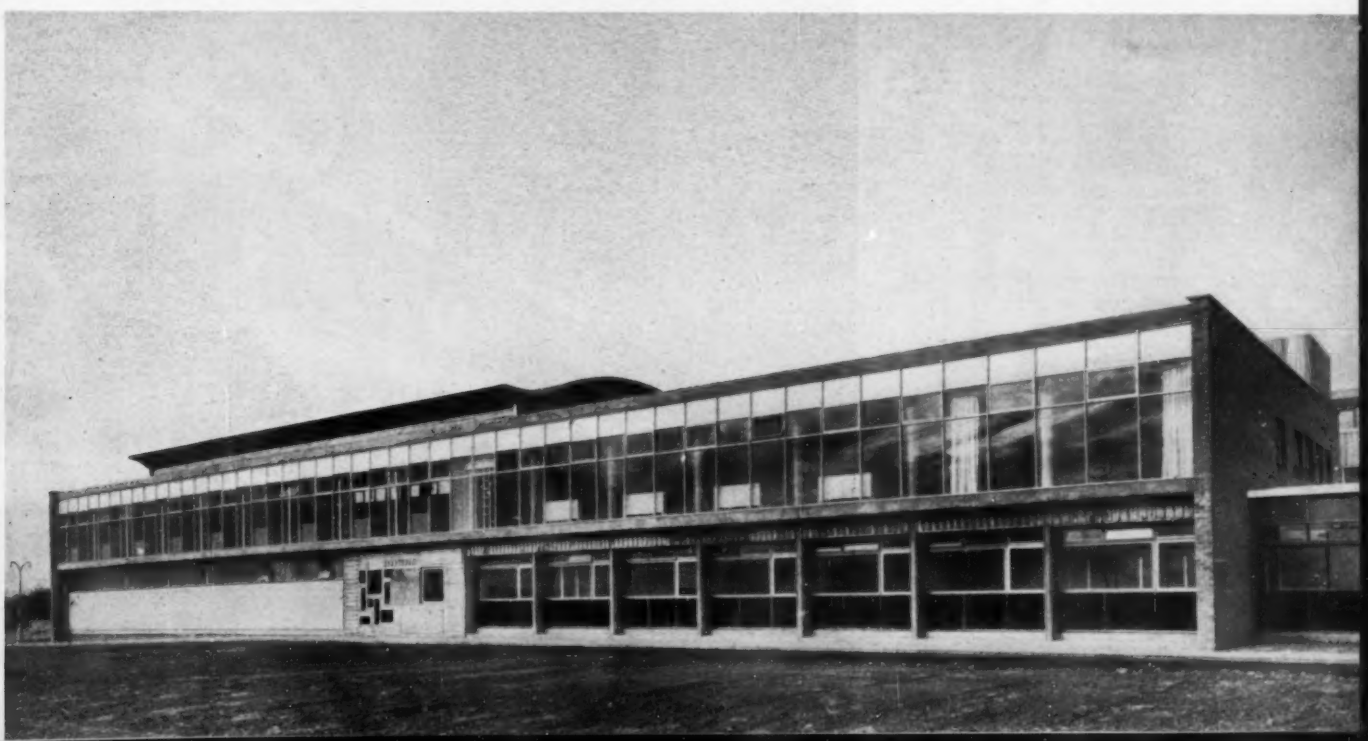
Managing the Contract

It was decided to make a broad division of the contract into three sections and to appoint a general foreman for each of them. This division was based on the layout of the site and was as follows : (1) factory, ancillary buildings, the services building, the boiler house and the raw chemical store; (2) the canteen block; (3) the office block and the single- and two-storey laboratory blocks.

Thus the Site Agent had beneath him three general foremen, each of whom was responsible for a major section in its entirety. The decentralization ensured that a supervisor of high calibre was available for detailed control and progressing of each section. In all other respects the organization followed Bovis' usual pattern of a London-based contract manager with an assistant contract manager, who spent part of his time on the site and part in London. Some idea of the scale of this contract can be obtained from the figures of removal of topsoil. There existed at one period a 6,000 cu. yd. stockpile of topsoil which had been removed by scraper from those areas of the site which

Continued on page 753

A general view of the canteen block



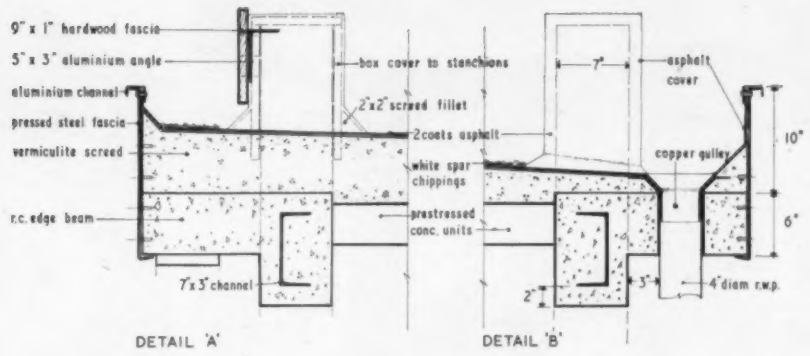
GEORGE ANGUS FACTORY

quantity surveyors :
T. HERDMAN RAE & PARTNERS

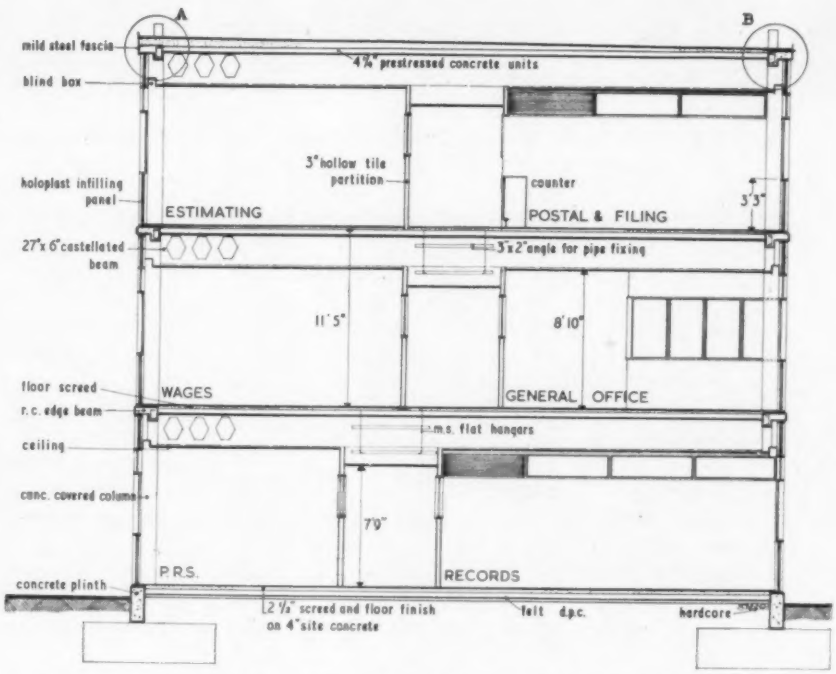
general contractor :
BOVIS LTD.

sub-contractors :

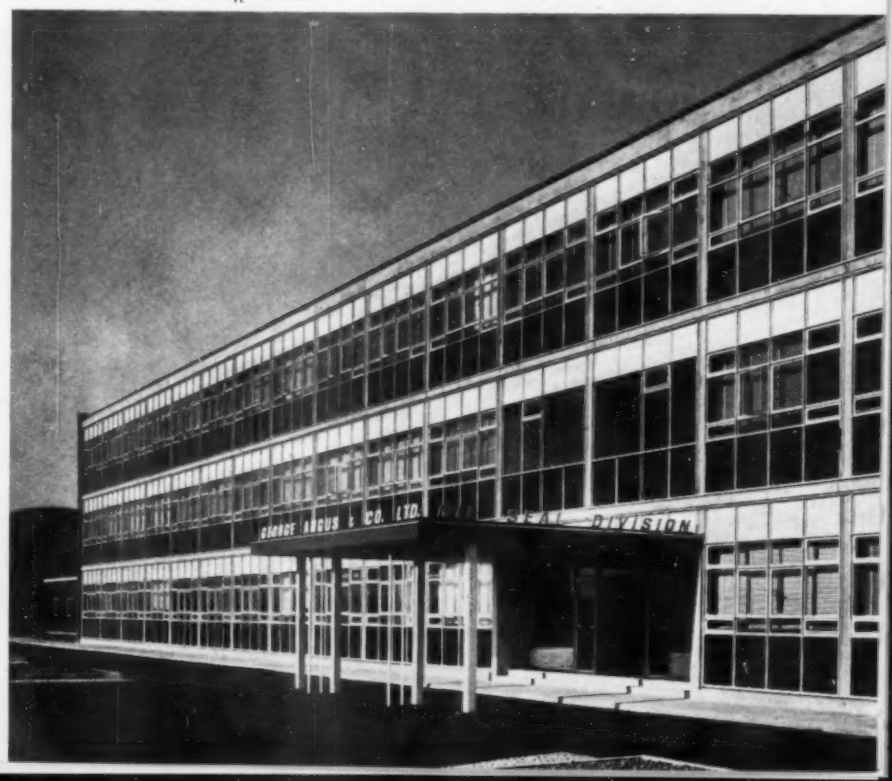
Blinds (Venetian) :
J. Avery & Co. Ltd.
Balustrades :
F. Kirkup & Co. Ltd.
Beams (Prestressed) :
Concrete Ltd.
Chimney (Reinforced Concrete) :
Tileman & Co. Ltd.
Copings, Kerbs, Flagstone :
S. Tyzack & Co. Ltd.
Cladding :
Robertson Thain Ltd.
Concrete Reinforcement :
British Reinforced Concrete Engineering Co. Ltd.
False Ceilings :
Sundeala Board Co. Ltd.
Fencing :
F. Kirkup & Co. Ltd.
Flooring :
Granwood Flooring Co. Ltd.
Greengate & Irwell Rubber Co. Ltd.
(*Vinyl*) N. Jack & Co. Ltd.
(*Granolithic*) Pollock Bros. (London) Ltd.
Foundation Stone :
C. S. Ormerod Ltd.
Furnishing (Laboratory) :
Mordue Bros. Ltd.
Robson & Sons Ltd.
Gates :
F. Kirkup & Co. Ltd.
Glazing :
Reed Millican & Co. Ltd.
Heating and Ventilation :
G. N. Haden & Son Ltd.
Ironmongery :
D. A. Thomas & Co.
Joinery :
Bovis Joinery Works.
Kitchen Equipment :
Benham & Sons Ltd.
Hobart Manufacturing Co. Ltd.
Stott & Co. (Engineers) Ltd.
Lifts (Goods & Passenger) :
Express Lift Co. Ltd.
Linoleum :
W. E. Harker Ltd.
Paint :
British Paints Ltd.
Panelling :
Coutts & Findlater Ltd.
Partitions to Water Closets (Metal) :
Henry Hope & Sons Ltd.
Piling :
Cementation Ltd.
Plastering & Floor Screeds :
Webster Davidson & Co. Ltd.
Plumbing :
Cairns (Newcastle) Ltd.
Refrigerator :
J. & E. Hall Ltd.
Road Surfacing :
Tarslag Ltd.
Roofing :
Wm. Briggs & Son Ltd.
(*Asphalt*) Asphaltic Roadways Ltd.
Rooflights :
(*Metal*) Mellowes & Co. Ltd.
(*Concrete*) J. A. King & Co. Ltd.
Sanitary Fittings :
Shanks & Co. Ltd.
Sign :
Nova Sign Co.
Shutters (Roller) :
Potter Rax Ltd.
Shuttering to shell roof :
Mills Scaffold Co. Ltd.
Site Works :
Dowsett Engineering Construction Ltd.
Sprinklers :
Mather & Platt Ltd.
Steel (Structural) :
J. W. Ellis & Co. Ltd.
Steel Platform :
Allan Kennedy & Co. Ltd.
Switchgear :
A. Reyrolle & Co. Ltd.
Terrazzo :
Toffolo Jackson & Co. Ltd.
Tiling (Wall & Floor) :
Summers & Co.
Walling (Curtain Hardwood) :
Construction Units Ltd.
Wallspan :
Williams & Williams Ltd.
Weighbridge :
W. & T. Avery.
Windows :
(*Metal*) Fredk. Braby & Co. Ltd.
(*Boiler House*) Henry Hope & Sons Ltd.

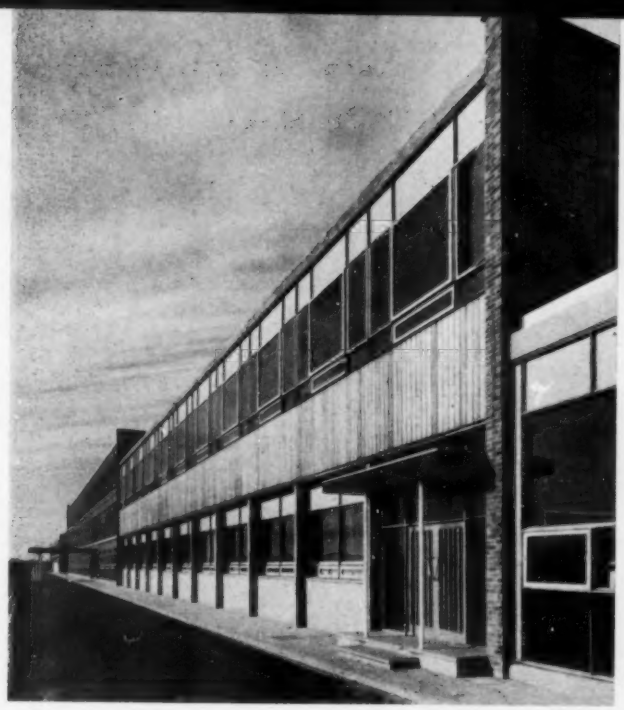


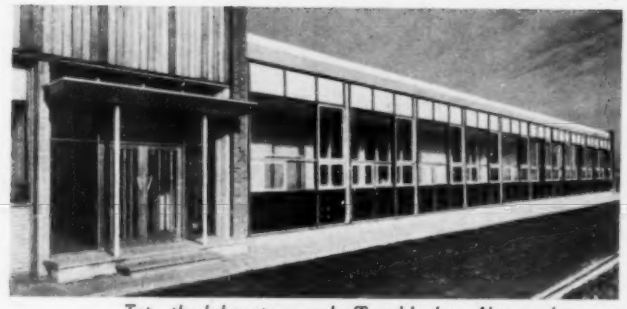
DETAIL 'A' DETAIL 'B'



The main entrance and office block **SECTION ABOVE TO SCALE 1 IN = 10 FT**







Top, the laboratory and office blocks. Above, the east end of the laboratory block. Below, plans and sections through the framing. Scale 1/10th full size

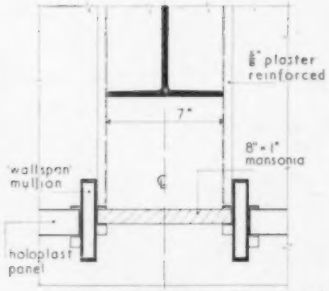
were going to be built over; incidentally these amounted to approximately six of the 19 acres within the site. All this soil has now been respread so that the planned layout can be proceeded with.

Construction

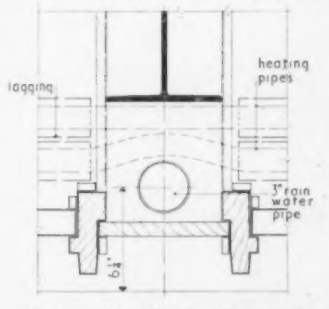
There were difficulties in the supply of steel owing to the strike in that industry in late 1955, and some replanning of the erection programme was necessary; this also had an effect on the design, for some steel sections were readily available while for others a long delay in delivery was probable. However close co-operation between client, architect and steel erectors made it possible to reduce the delays to days rather than months.

Types of construction used were as follows: for the 158,400 sq ft factory a 60ft grid with stanchions at each grid intersection. These were linked by castellated beams, and within this basic framework five bays were formed and covered by flat decking alternately with monitor lights. The boiler house was also steel framed. For the three storey offices and the laboratory blocks a 12ft module was chosen, and this was coupled with a 40ft clear span in the offices and two 30ft spans in the laboratories.

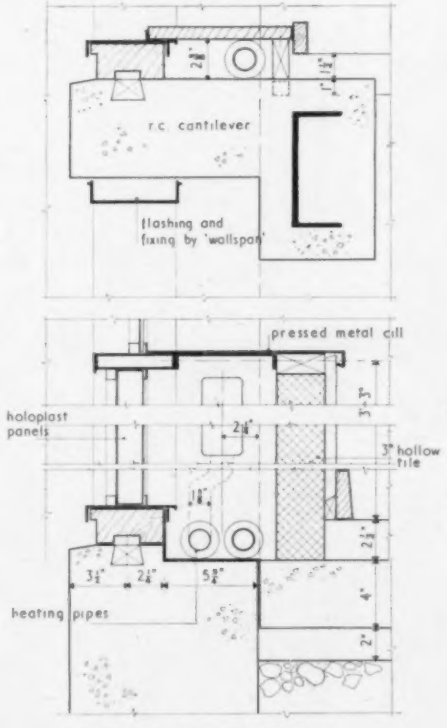
The factory walls are of patent vertical aluminium cladding, while the office, canteen and laboratory blocks are clad in curtain walling. There is a variation in the type of walling used between one block and another owing to difficulty experienced in obtaining sufficient



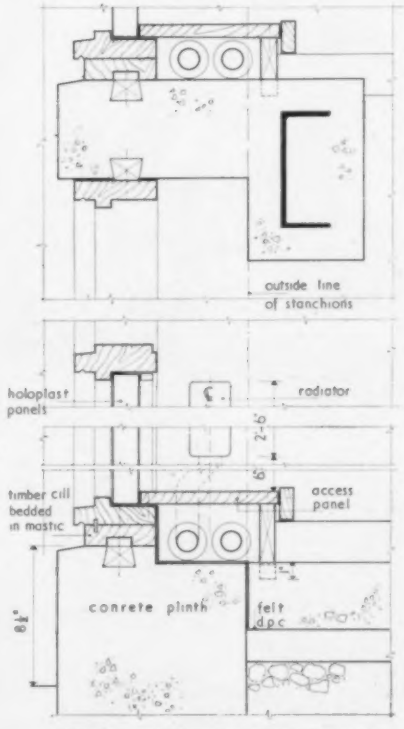
PLAN AT STANCHION 'WALLSPAN'



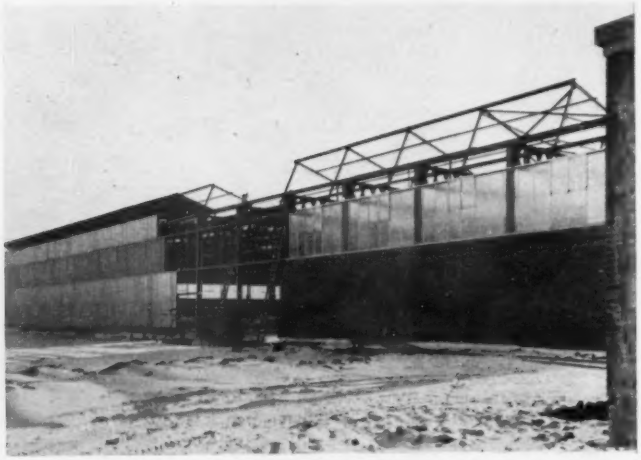
PLAN AT STANCHION WITH R.W.P.



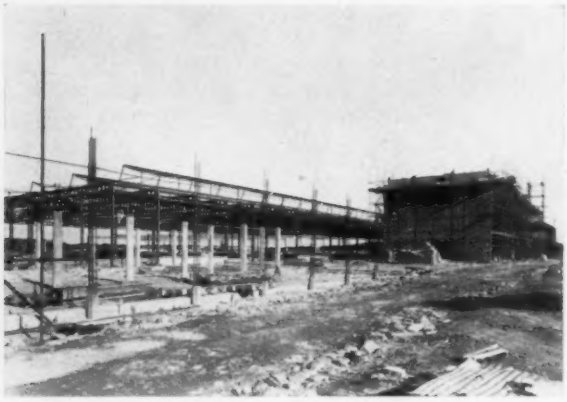
SECTION THROUGH 'WALLSPAN'

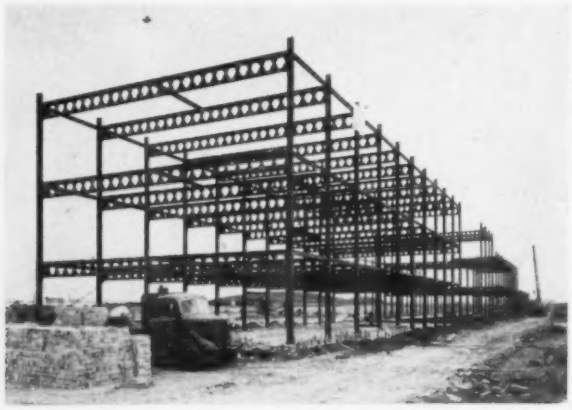


SECTION THROUGH TIMBER FRAMING



This is a series of photographs, taken at intervals of about two months, showing the progress of work





supplies of the patent aluminium curtain walling originally specified. When it was discovered in the planning phase that this difficulty existed various alternatives were canvassed. It became obvious that no conventional solution could avoid a serious delay in the programme. Bovis therefore suggested that it might be possible to replace the metal curtain wall on certain sections of the building with a timber-framed substitute, which could be made at once in their own joinery works. By close consultation between the architects and Bovis an acceptable substitute in hardwood was designed and applied to a substantial proportion of the frontages. One of the requirements of the client's brief was that the office and laboratory blocks should be capable of expansion. It was decided that any such expansion should be vertical rather than horizontal, and therefore the design of the steel and the detail design of the roof allows for further storeys to be added without major reconstruction.

Side by side with this the factory has been laid out in such a way that expansion of the production lines can be made in a horizontal direction either in length or in parallel without any disruption of production.

The canteen, as already mentioned, is constructed in reinforced concrete. The ground floor of this block contains the administrative, security and other offices directly connected with the factory. Above is the canteen; in its area are included visitors', staff and factory dining rooms, kitchens and service rooms. Over the main canteen is a barrel vault roof only 2in thick.

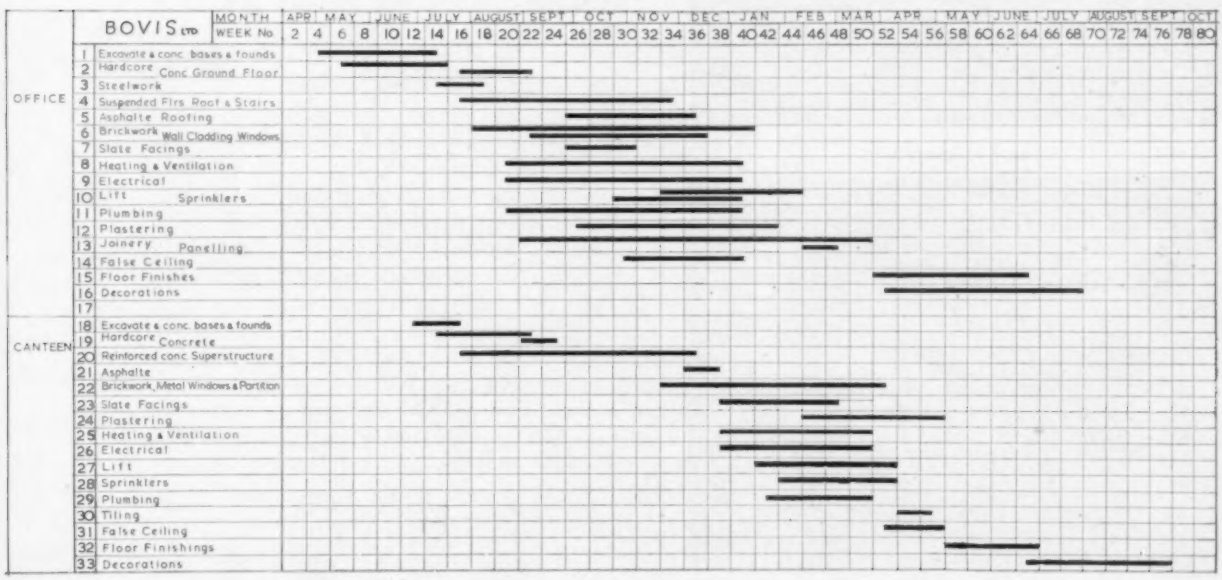
GEORGE ANGUS FACTORY

In a contract of this size completion on the planned date is often difficult to achieve. However, by close co-operation between all concerned the clients were able to begin installing plant only nine months after steel erection had begun, and within a month production had begun.

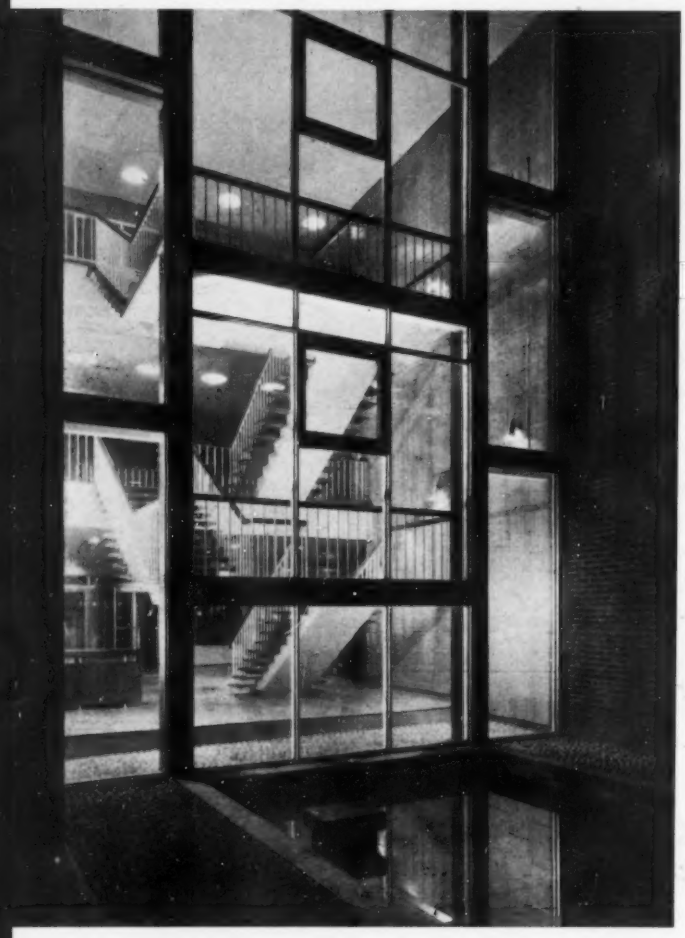
This was made possible by frequent site meetings at which a representative of the client was present who could make decisions on the spot. Thus any minor questions arising could be settled at once. The culmination of this process was the meeting at which the installation programme was thrashed out. The client's staff had already agreed the basis upon which they wanted to move into the factory, and in order to make this possible with the minimum of disruption of the building and plant installation programmes, detailed agreements as to availability of roads, etc., had to be made. The magnitude of this problem can be appreciated when it is realized that heavy lorries carrying plant were using roads still under construction at the rate of one every 20 minutes during the daytime.

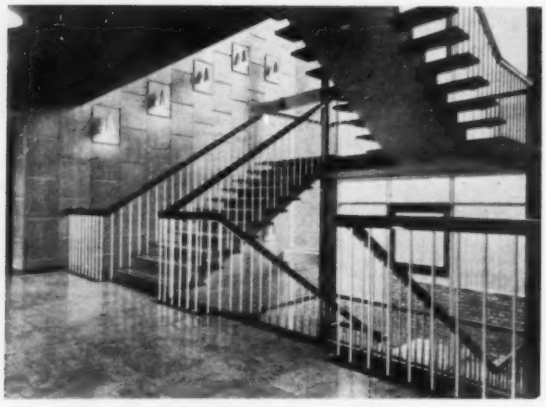
Another series of regular meetings which were of vital importance were those devoted to cost control. At these meetings the Architects, Quantity Surveyors, Bovis' Surveyors and contract staff and the client's representatives met to agree current valuations and to re-assess on the latest information the forecast final cost. By accurate cost control applied at all stages of the job, coupled with the bonusing scheme, the actual cost was held at a figure within that estimated.

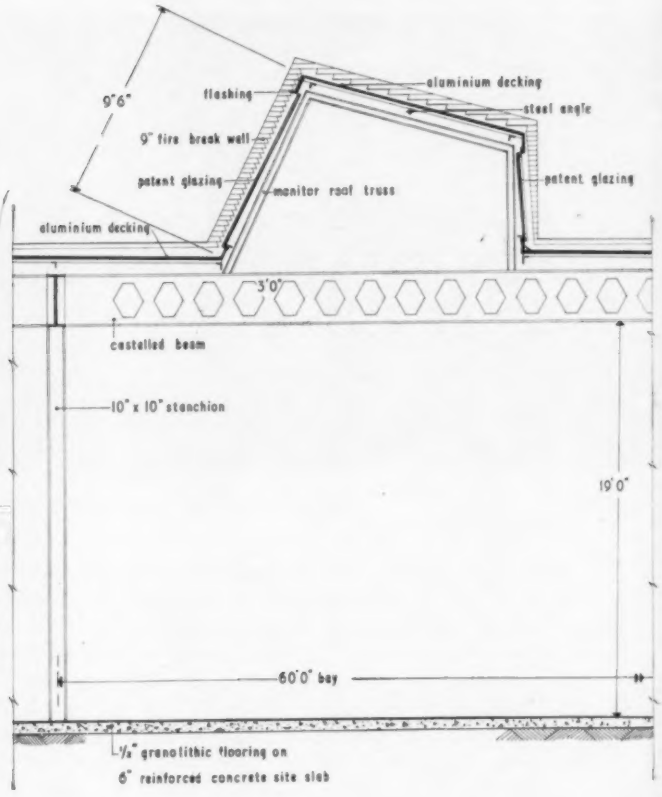
This is a progress chart prepared by Bovis Ltd. at the beginning of the job and adhered to right to the end



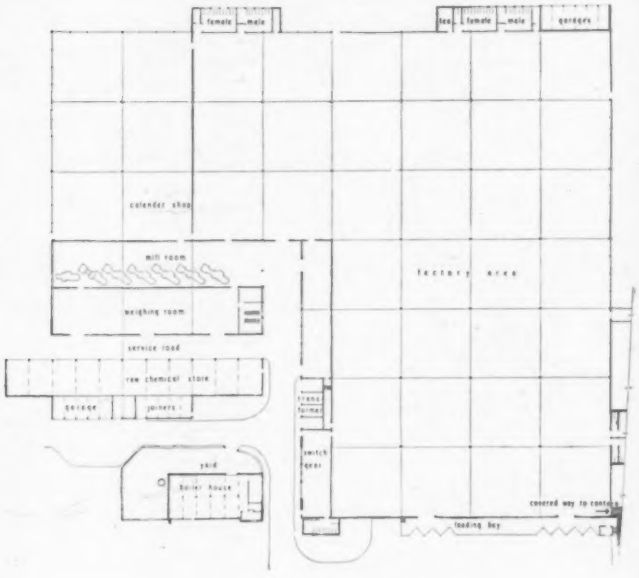
GEORGE ANGUS FACTORY







Above, section through a typical bay in the factory area. Scale: 1in. = 8ft. Below, plan of the main factory area. Scale: 1in. = 144ft. Left, two views of the main staircase in the office block



AN EXERCISE IN MODULAR CO-ORDINATION

On the following pages are illustrated three schemes for a public library. These were prepared by students of the Regent Street Polytechnic School of Architecture to test the application of the B.R.S. number pattern for the modular co-ordination of buildings.

DURING the past year students of the fourth year at the School of Architecture, Regent Street Polytechnic, participated in a programme of research into the application of a system of modular co-ordination to the design of buildings. The study was based upon the proposed Building Research Station Number Pattern for modular co-ordination and was integrated with an annual large-scale civic design project undertaken by groups of third and fourth-year students. This study, which was carried out in co-operation with the Town Planning department of the L.C.C., consisted of the preparation of a site plan for an area between the new Golden Lane housing scheme by Messrs. Chamberlain, Powell & Bon, and Bunhill Fields, north of the City, and involved the design of housing accommodation, shopping areas, offices and public buildings. The various buildings were designed by individual members of each group.

The programme was under the direction of the fourth-year staff, with assistance from the Architects Division of B.R.S. Contact was maintained between the two by Frederick Stahl and Ezra Ehrenkrantz, both of whom were attached to B.R.S. on Fellowships from the United States.

The main purpose of the programme was to test the design limitations of the proposed system, and the more conventionally "grid planned" buildings such as schools and factories were avoided in favour of a civic building with its greater variety of required spaces and its greater freedom of design. It was not expected that these buildings would necessarily be made to conform completely with the modular system, and the experiment was therefore concerned with the extent to which a system of co-ordination using a large proportion of standardized products could be applied without unduly limiting the scope of the design.

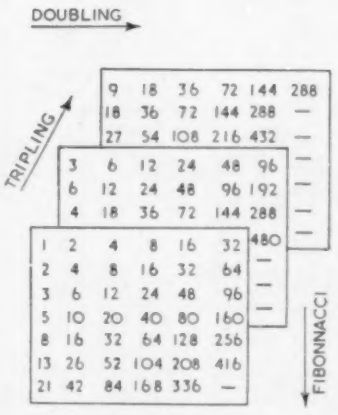
In order to assess the process of application of the system in design, students were asked to prepare preliminary sketches without particular reference to the number pattern, although they had previously been introduced to the rationale. At the stage of translating rough sketches into accurate drawings the schemes were organized in terms of number pattern dimensions.

The designs were then presented as in a normal design problem with accompanying dimensional analysis, as indicated in the three sets of drawings reproduced. The students have been asked to describe their own work and to present their own reactions to the experimental use of the pattern.

In general very little difficulty was encountered by the application of the number pattern over the ordinary preparation of a design for a building of this scale. Considerable freedom was found within the system, especially since additional flexibility was introduced through the small number of special elements which would be required for a building of this character. The detail problems of the schemes tended to become apparent at an early stage and had to be dealt with rather than pushed aside and made to work at the last moment. Some found the geometrical relations within the pattern useful in organizing the design, and in many schemes a clear relationship of building elements resulted.

The fourth year is now continuing the study by producing working drawings of these designs. It is anticipated that considerable information, useful for formulating ranges of building components, will be produced in the detailed study.

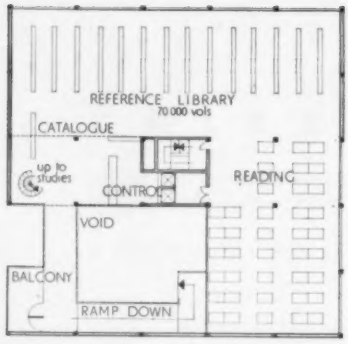
1	2	3	4	5	6	·	8	9	10	·	12	1'-0"
13	·	15	16	·	18	·	20	21	·	·	24	2'-0"
·	26	27	·	·	30	·	32	·	·	·	36	3'-0"
·	·	39	40	·	42	·	·	45	·	·	48	4'-0"
·	·	·	52	·	54	·	·	·	·	·	60	5'-0"
·	·	63	64	·	·	·	·	·	·	·	72	6'-0"
·	·	·	·	·	78	·	80	81	·	·	84	7'-0"
·	·	·	·	·	90	·	·	·	·	·	96	8'-0"
·	·	·	·	·	·	·	104	·	·	·	108	9'-0"
·	·	·	·	·	·	·	·	117	·	·	120	10'-0"
·	·	·	·	·	126	·	128	·	·	·	·	11'-0"
·	·	135	·	·	·	·	·	·	·	·	144	12'-0"
·	·	·	·	·	·	·	·	·	·	·	156	13'-0"
·	·	·	160	·	162	·	·	·	·	·	168	14'-0"
·	·	·	·	·	·	·	·	·	·	·	180	15'-0"
·	·	·	·	·	·	·	·	189	·	·	192	16'-0"
·	·	·	·	·	·	·	·	·	·	·	·	17'-0"
·	·	·	208	·	·	·	·	·	·	·	216	18'-0"
·	·	·	·	·	·	·	·	·	·	·	·	19'-0"
·	·	·	·	·	234	·	·	·	·	·	240	20'-0"



The B.R.S. number pattern is a series of dimensions proposed for the co-ordination of building elements. The pattern results from combinations of doubling and tripling and Fibonnacci series, and it is intended as a dimensional framework from which to select sizes of components.

The development of ranges of components and an appraisal of the number pattern approach to modular co-ordination is now being carried out by the B.R.S. as part of an international research project sponsored by the European Productivity Agency.

AN EXERCISE IN MODULAR CO-ORDINATION

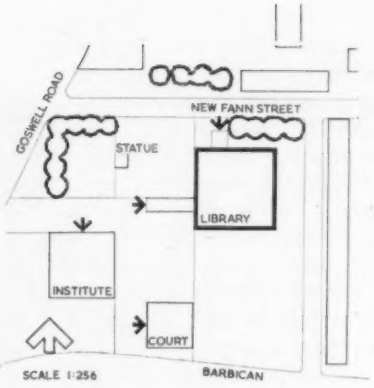


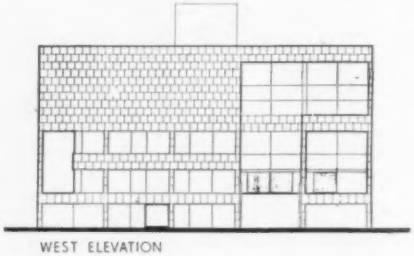
UPPER FLOOR

MEZZANINE FLOOR

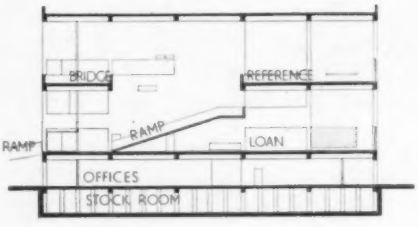
UPPER GROUND FLOOR

LOWER GROUND FLOOR





WEST ELEVATION



SECTION THRO' ENTRANCE

PLANS SECTION & ELEVATION
SCALE: 1 IN = 64FT

On the left and above, are shown the initial sketch drawings of scheme A, prepared without any particular attention to modular co-ordination. On the right-hand page are drawings made in accordance with the modular system proposed by the B.R.S.

SCHEME A

The building was conceived as a cube which contained various volumes of activity; these volumes in turn generated the structural grid and the elevations. Since these drawings have been prepared it has been decided to express all the structure clearly as shuttered concrete; panel infillings will be of Portland Stone facing, which is considered more suitable for weathering in large areas, and other bays are to be glazed with vitreous enamel.

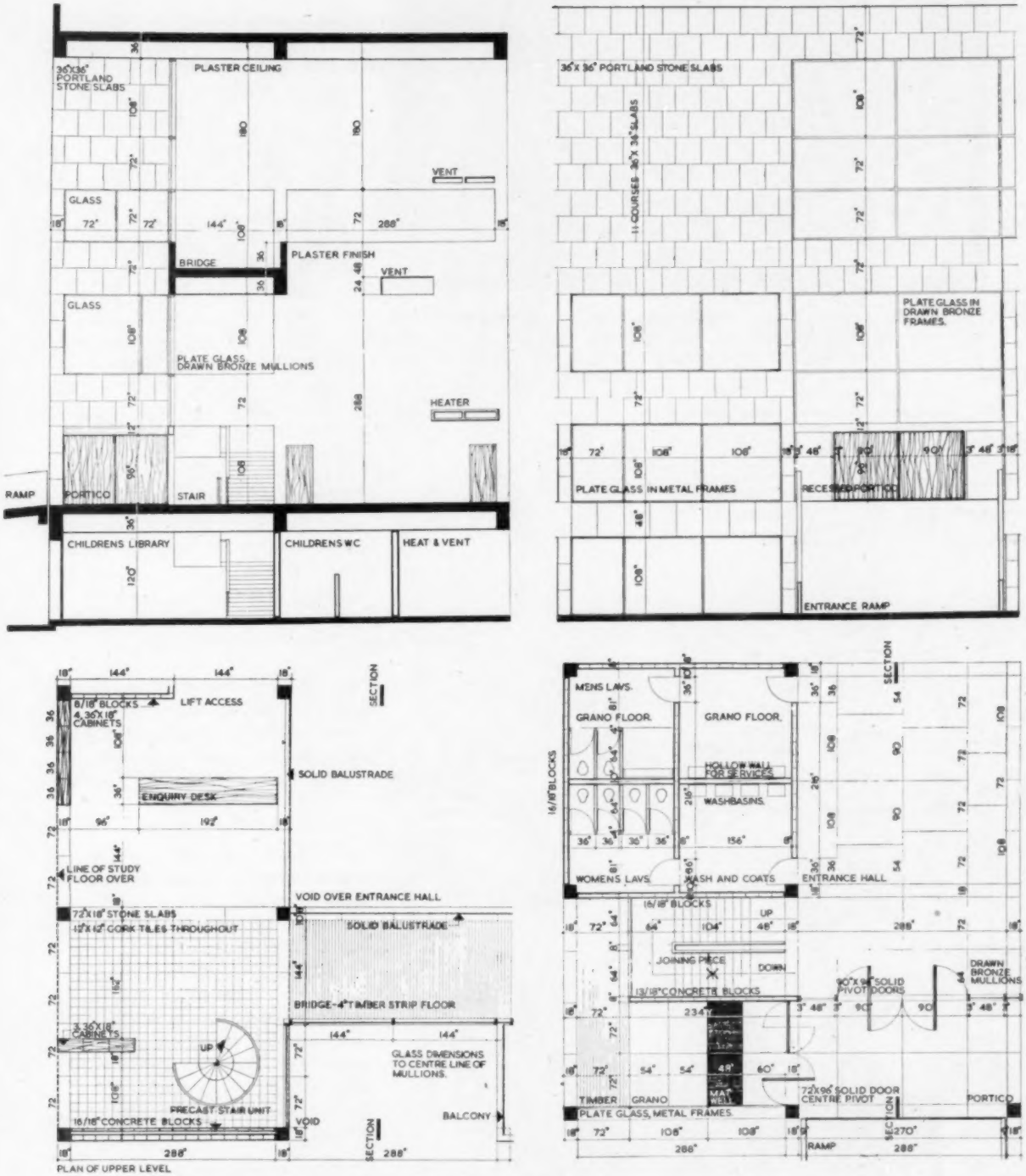
The libraries are placed at right angles one over the other, the large space remaining within the square forming the entrance hall. Various small libraries are placed on mezzanines: this allows independent access to each library from the entrance hall. A staff circulation core runs vertically through the centre and serves the libraries directly. Access is also provided to the stack and from one library to another without interfering with public circulation.

Offices, workshops and heating plant are placed below the principal floor which is itself elevated and approached by a ramp. A separate entrance is provided for the lecture hall.

Modular Co-ordination

After the design had been developed as a frame building a dimension had to be chosen for clear column spacing; in this case the bay was to be of equal size in each direction. A suitable column size had to be selected, and it was decided that this should fit in with the same breakdown of sizes as the bay dimension so that any unit which might run through the column and bay dimensions could still be co-ordinated.

The bay size decided on was 24ft (288in) and the column size 18in. This meant that several claddings could be used: 9in brick,



PLANS & SECTIONS SCALE: 1 IN = 16FT

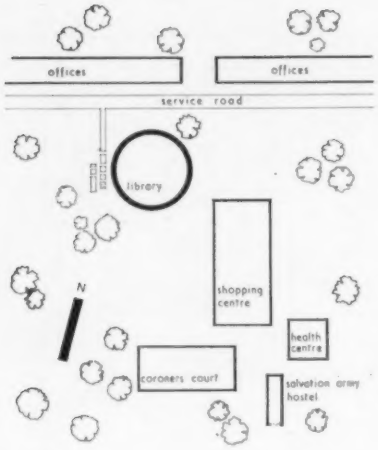
18in blocks, 36in by 18in facing slabs and 72in vitreous enamel units.

The bay dimension split easily into several useful ratios such as 3:5, 1:2, 1:3, 1:4, which gave a good breakdown to a glazed panel of 3:2:3 proportion vertically with 1:1 horizontally. In general internal finishing elements are organized on the same proportional basis.

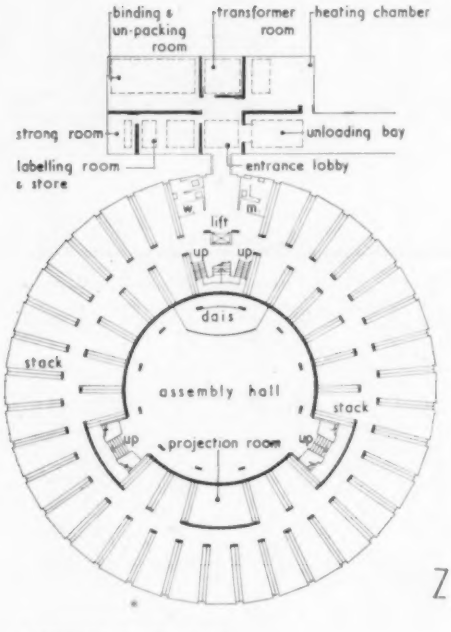
Some difficulty was found in applying the pattern to closely planned bays, for instance the coat-rooms which are reproduced here, but with careful attention even this could be achieved.

Difficulty was mainly experienced in the correct bonding of walls, doors and door frames in one run of dimensions: this was solved by adopting 36in as dimension for a unit of door and frame. The main entrance doors, however, were treated separately from the frame. This scheme was prepared by John Fowler.

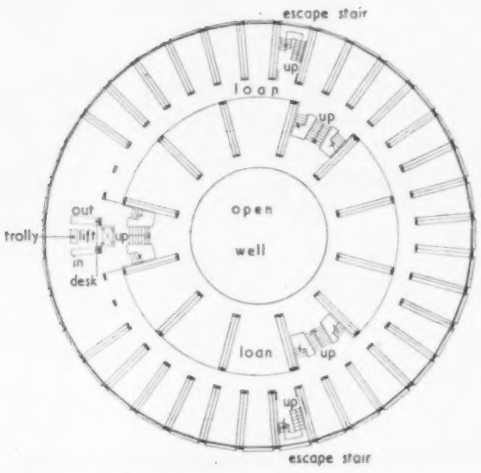
EXERCISE IN MODULAR CO-ORDINATION



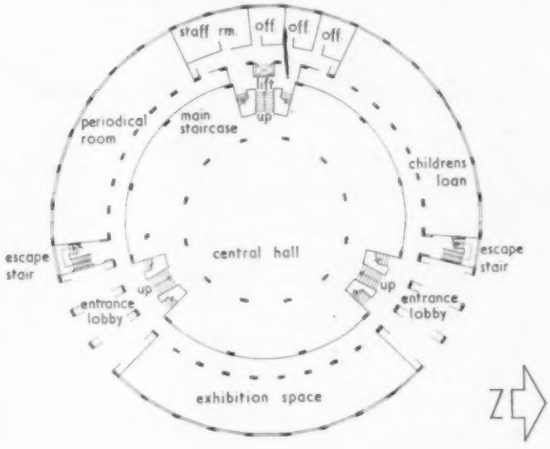
SITE PLAN



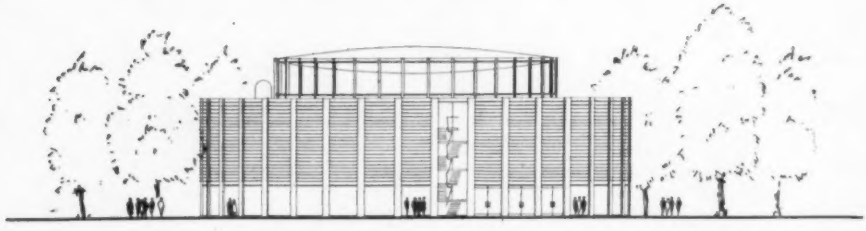
BASEMENT STACK PLAN

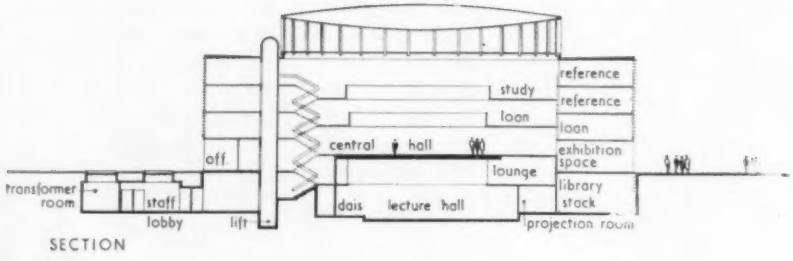


LOAN FLOOR PLAN



GROUND LEVEL PLAN



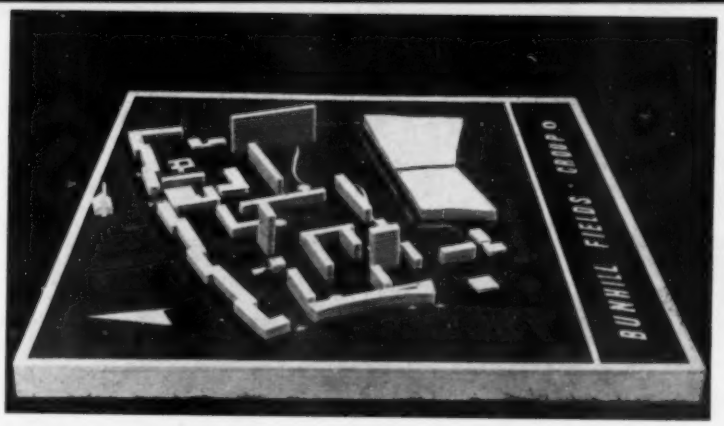


SECTION

SCALE: 1 IN = 48 FT

Plans, elevation and section of scheme B. In this case the structure is intended, very largely, to be the final finish, and modular dimensions are taken to the edge of the structure and not to centre lines: in this way the complications of modular co-ordination are resolved for the most part

THE ARCHITECT and Building News,
6 December 1956



One of the models of the whole neighbourhood. Groups of suudents combined for the town planning, but individual students designed the actual buildings. The libraries illustrated were each planned as part of the civic centre of this neighbourhood

SCHEME B

Two of the conditions considered most desirable in a public library are good natural lighting and tranquillity. By arranging the stacks in a radial manner it was found that these conditions could be achieved. The stacks pass throughout the height of the building—the shelving system being omitted at ground level in order to provide a generous sized entrance hall and exhibition space.

An administration service core inter-connects the levels and determines the positions of the control desks.

To avoid any structural or design complexities arising at the centre of the building it was decided to keep the space free. This open well proved to be of considerable value, as it allowed enough flexibility in a radial direction to allow for variations when modifying dimensions to the number pattern.

Modular Co-ordination

At the beginning of the programme it was emphatically stated that one should not allow the number pattern to inhibit the design.

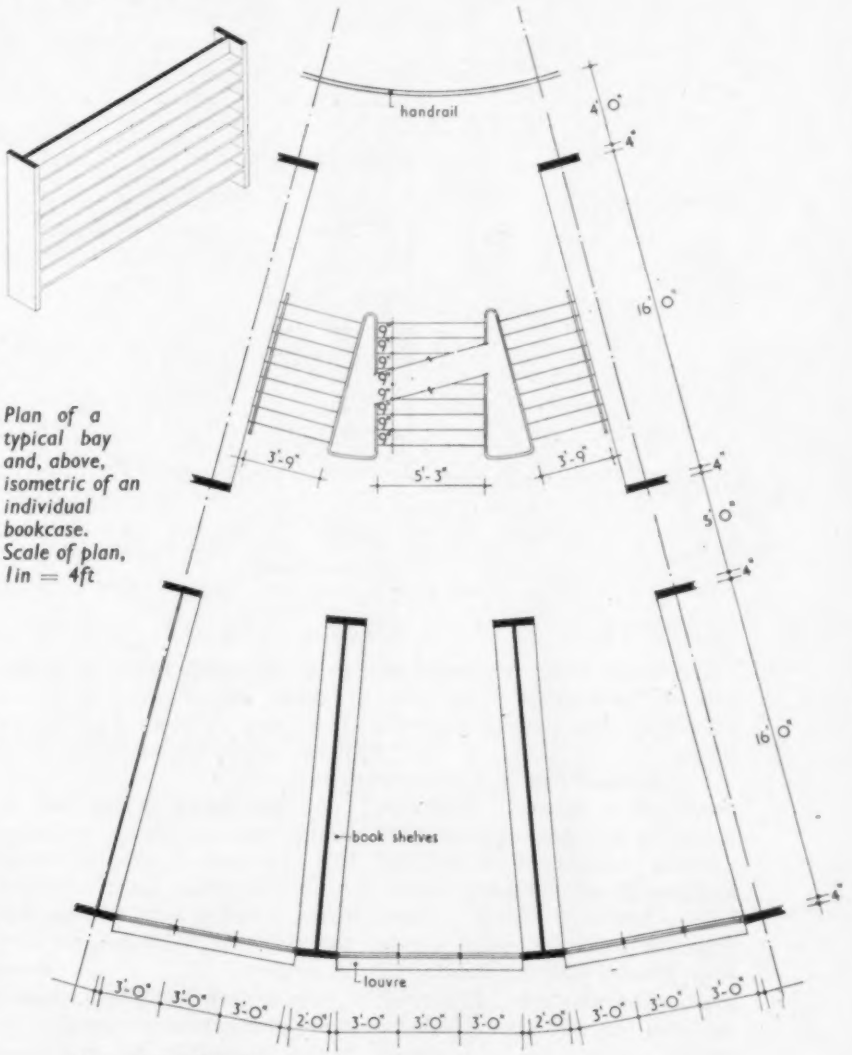
We therefore attempted to approach the problem as though no such pattern existed.

Only when a solution had been arrived at and drawn up to $\frac{1}{8}$in scale, did we begin to modify dimensions.

Fortunately we found few and generally very small variations were necessary. This we feel is primarily due to the avoidance in the initial working out and drawing up of the scheme of dimensions that are normally accepted as awkward—such as rare fractions and such numbers as 11 or 19.

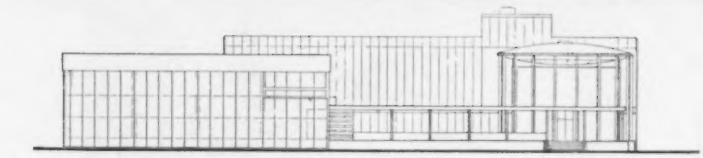
All number pattern dimensions were related to the structure but not to the centre lines; this we found the simplest method of gaining co-ordination.

It is expected that complications will arise when claddings and finishes are applied, but by careful choice of structural materials it is hoped that it will not be necessary to have these superficial surfaces, thus avoiding any extra number pattern problems. Scheme by John Collins and Donald Lacey.

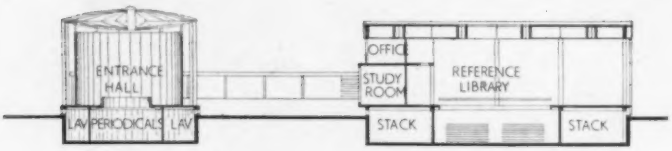


Plan of a typical bay and, above, isometric of an individual bookcase. Scale of plan, 1in = 4ft

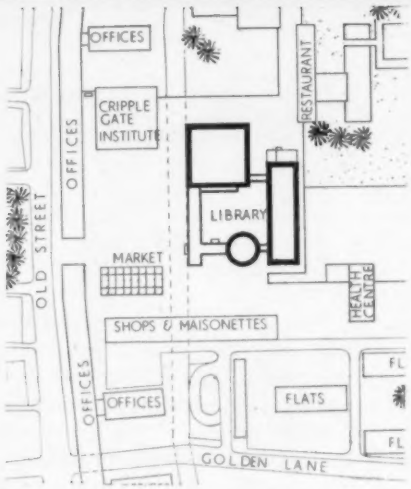
PLAN OF TYPICAL BAY



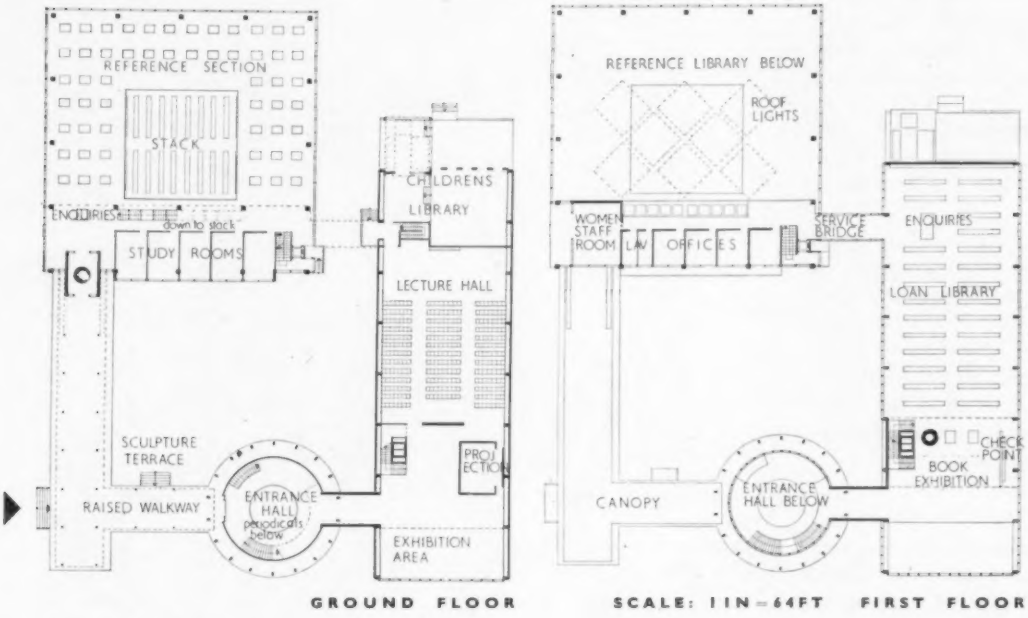
NORTH ELEVATION



SECTION X-X



AN EXERCISE IN MODULAR CO-ORDINATION



SCHEME C

The library group is elevated on a plinth, the centre of which is depressed to form a paved sculpture terrace.

The entrance hall is a plywood drum with a translucent roof supported by free-standing aluminium columns. It serves the lecture hall and loan library through a double-height exhibition space. These areas are contained within a long R.C. framed structure faced with glass and pre-cast slabs. This building also contains the children's library, which has a separate entrance.

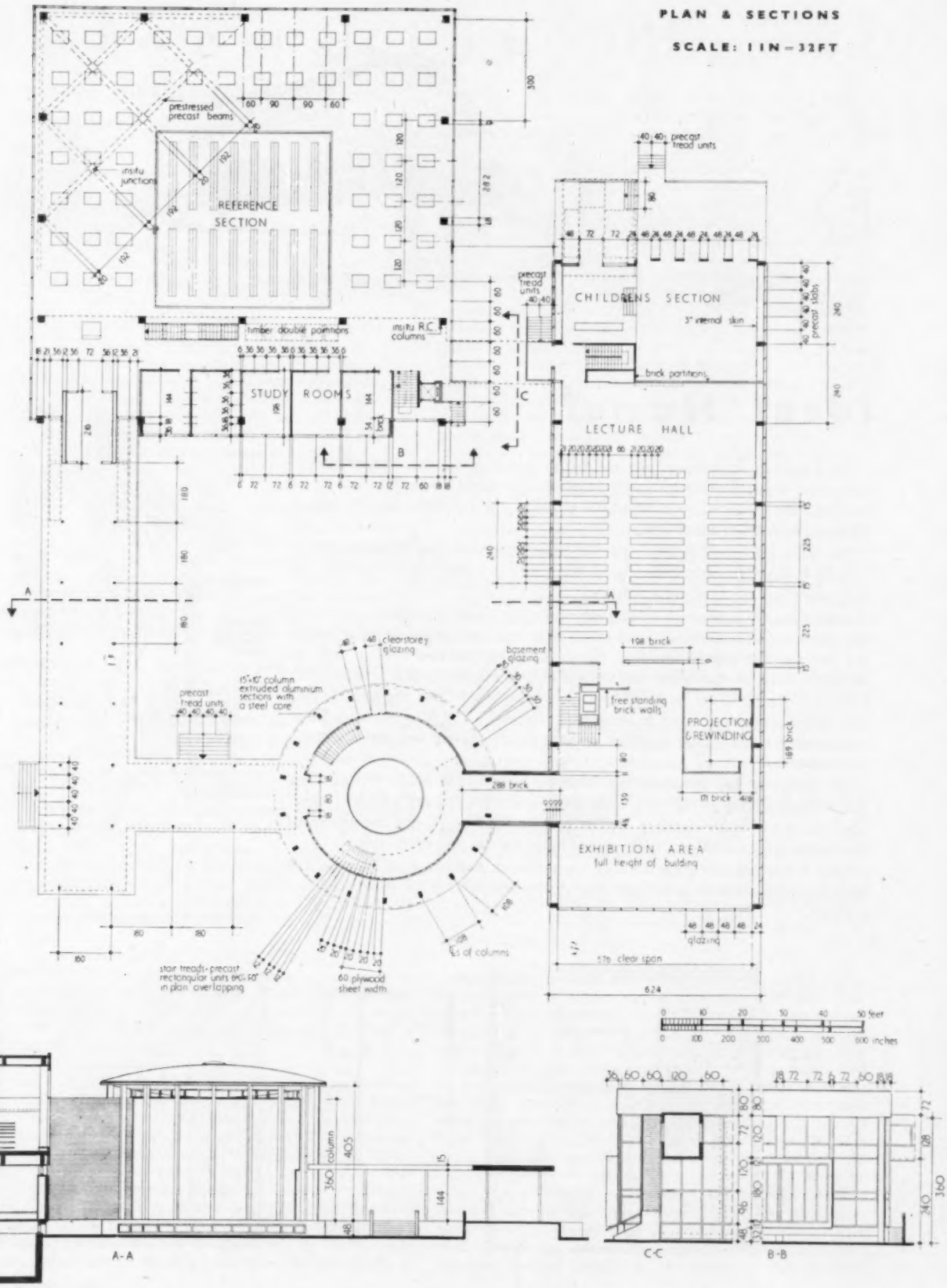
The subsidiary elements, i.e., the reference library, study rooms, offices and stack are housed in a separate structure with access along the plinth under a canopy.

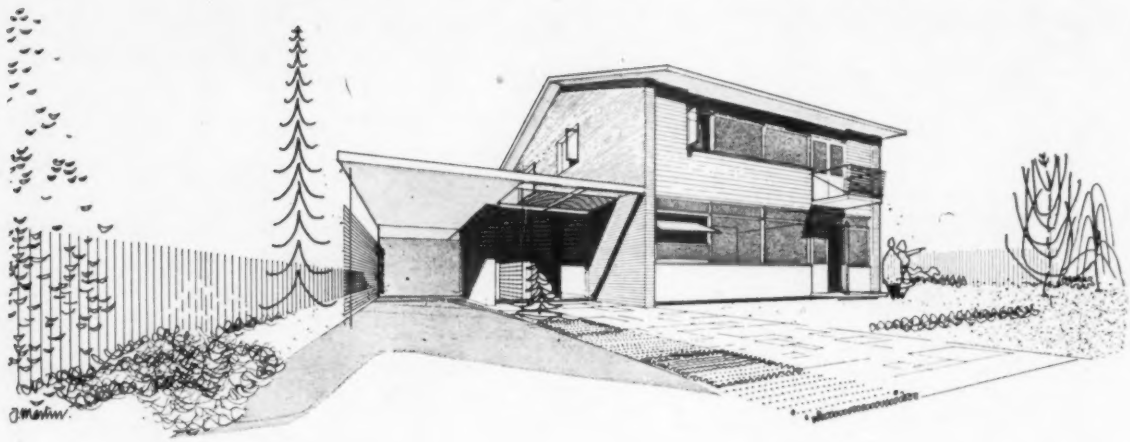
Books are conveyed from the main stack direct to the reference library and by lift and trolley to the loan library.

As the library design was resolved into three linked buildings, difficulty arose in finding vertical dimensions, which could be broken down, to facilitate the different uses, structures and claddings in the three elements.

The complexity of linear relationships within the drum made it virtually impossible to co-ordinate the perimeter and radial components. By ignoring one aspect (the radial dimensions), it was possible to design the building so that suitable number pattern dimensions could be selected for the circumferential elements, i.e., plywood wall, basement and clerestorey glazing, and pre-stressed, pre-cast rectangular stair units. All spanning elements (radial) had to be specials, i.e., *in situ* R.C. floors and translucent plastic sprayed aluminium roof.

Because the diameter of the drum is not a number pattern dimension it was difficult to relate, on plan, the linking elements abutting the drum. Thus flexible joints were designed; to the north, a canopy, which stopped short of the drum wall, and to the south, a brick link which penetrated the plywood skin and stopped within the nearest brick dimension to it. Scheme by Thomas Kay.


PLAN & SECTIONS
SCALE: 1 IN = 32 FT
prestressed precast beams
insitu junctions
REFERENCE SECTION
timber double partitions
insitu R.C. columns
STUDY ROOMS
precast tread units
CHILDRENS SECTION
3" internal skin
brick partitions
LECTURE HALL
198 brick
PROJECTION & REWINDING
169 brick
111 brick
288 brick
free standing brick walls
basement glazing
clearstorey glazing
15"x10" column extruded aluminium sections with a steel core
precast tread units
EXHIBITION AREA full height of building
glazing
57ft clear span
624
stair treads- precast rectangular units 6ft. 6ft. in plan overlapping
60 plywood sheet width
ends of columns
0 10 20 30 40 50 feet
0 100 200 300 400 500 600 inches
A-A
C-C
B-B



Ideal Home?

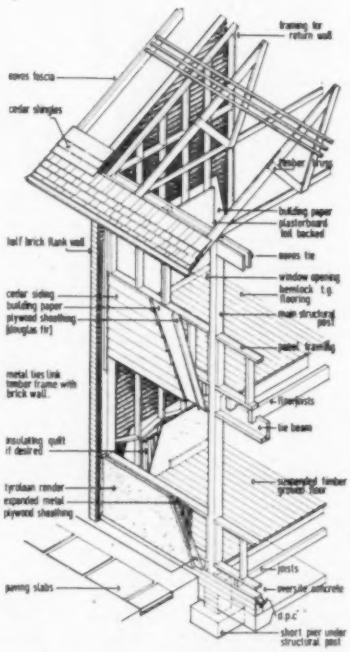
The Canadian Government and the British Columbia Lumber Manufacturers' Association are sponsoring the construction of a Canadian timber frame house at the Daily Mail Ideal Home Exhibition next year. The Exhibition will be held at Olympia from March 5th to 30th.

The house has been designed by the architects, Wells and Hickman, and it includes a warm air central heating system ; by this means "open planning" on the ground floor has been made feasible.

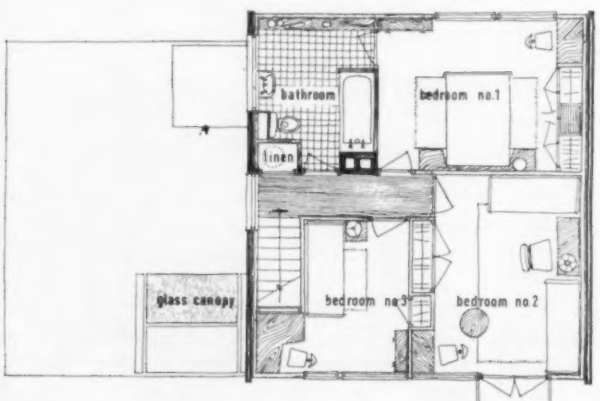
The structural framework is all timber—Pacific Coast Hemlock—and in the demonstration house the finishes will be cut away in places to show the construction. The roof shingles, weatherboarding, interior panelling and roof decking over the car port is Western Red Cedar, and the roof battens Eastern Spruce. The bedroom flooring is Pacific Coast Hemlock, the living room Maple, and the other ground floor rooms composition tiling on Douglas Fir plywood. The flank walls are faced with brickwork and weatherboarding, and the panels on front and rear elevations are rendered.

The design of the demonstration house conforms to the Model By-laws, the only limitation being on the siting if shingles rather than tiles are used for roofing. The area of the house including the car port is 1,400 sq ft, and the estimated cost ranges from £3,000 to £4,000 depending on finishes and equipment.

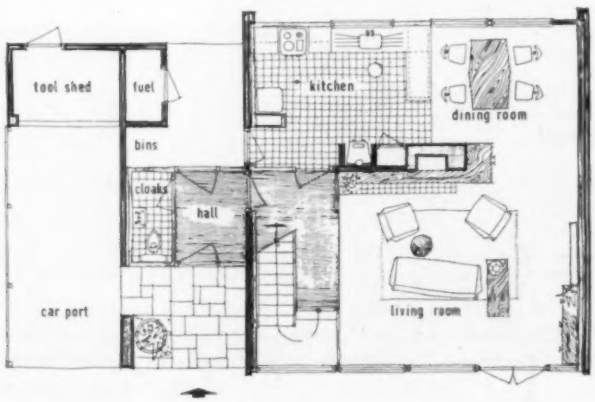
Heal & Son Ltd. are going to build the demonstration house at Olympia, and many builders are said to be interested in the scheme to build these houses in England.



ALL CARCASSING TIMBER C.L.S. (SURFACED) PACIFIC COAST HEMLOCK



FIRST FLOOR PLAN



GROUND FLOOR PLAN

Information Digest

OFFICIAL PUBLICATIONS

● **British Standard Specifications,** from British Standards Institution, British Standards House, 2 Park Street, London, W.1. Telephone : Mayfair 9000.

B.S. Building Handbook Addendum Sheets. Price 9/-.

B.S. Glossary of Terms for Concrete and Reinforced Concrete. Price 7/6.

Code of Practice for Frost Precautions (C.P. 99 : 1956). Price 2/6.

B.S. 2777 : 1956. Asbestos Cement Cisterns. Price 2/-.

B.S. 2788 : 1956. Fireguards for Solid Fuel Fires. Price 2/6.

The second series of Addendum Sheets to enable purchasers of the loose-leaf handbook (introduced last year) to bring its contents up to date is now available. There are three new summaries of recent Standards among the sheets and revisions to fifteen earlier Standards. The Handbook when incorporating both sets of Addendum Sheets gives summaries of about 300 Standards. Registered owners of the Handbook are being sent Order Forms for the Addendum Sheets. The complete Handbook including Addendum Sheets costs £4.

It is not clear whether there is some quick-reference device to enable a purchaser to pin-point the changes where revisions have taken place. The descriptive leaflets issued by the B.S.I. with each notification of a specific revision are most helpful in this way. Without such an aid there is much hard labour in store for conscientious purchasers in comparing the old and new forms of the Standards and annotating the new ones suitably.

Glossary of Terms for Concrete and Reinforced Concrete. Some 700 terms and definitions relating to the design, constituent materials, mixing, placing and testing of concrete and reinforced concrete have been collected in alphabetical order in this Glossary, occupying 40 pages. Even then it is admittedly incomplete as it was realized that advances in the technology of pre-stressed concrete were so rapid that the whole of this field could not be dealt with exhaustively, so only a limited number of terms has been included which deal with this type of design and work.

The Glossary should be of considerable value in leading to the understanding of precise meanings of technical terms and put an end to ambiguities in technical writing and—just as important—interpretation of technical literature.

While the arrangement is alphabetical, there is considerable cross-referencing and grouping of subjects to simplify the use of the Glossary. From time to time additional Glossaries will become available as this series, designed to cover the building and associated industries, is collated and published.

Frost Precautions for the Water and Sanitary Services in Buildings. After our experience last winter it seems improbable that there should be any need to emphasize the need to protect services from frost. The enormous bills incurred by housing authorities alone due to inadequate protection must have impressed every reader with the need to re-examine the methods customarily specified. This Code of Practice is divided into three main parts (a) Location of fittings; (b) Insulation and (c) Draining facilities. Each of these is examined in considerable detail and covers all situations likely to be encountered in practice. The section dealing with location of fittings includes recommendations concerning service pipes both outside and inside buildings, while that on insulation gives full information on thermal conductivity of many insulating materials, recommended thicknesses and methods of application. (It might be noted in this connection that some heat from the building can with advantage sometimes be allowed to leak into a service pipe, otherwise well insulated as a device for overcoming the loss of warmth of static water.) Suitable locations for stop-valves and draining taps are given in the third section. By closely adhering to these recommendations it is evident that in a well laid out scheme damage can be avoided, but in practice reverse falls in pipes are liable to make drainage impossible while airlocks when refilling are quite common. The human element is as usual the main problem—finding a normal occupier able and willing to do the draining and refilling at the essential times. Unless precise, clear instructions strictly applicable to the installations permanently affixed to the systems can be provided it is doubtful whether the uninitiated tenants or house-owners are to be expected to make use of the facilities so thoughtfully provided.

Asbestos Cement Cisterns. These have been on the market for many years and could have filled many a gap during the war period if there had been an approved form of manufacture. Even some of those closely connected with asbestos cement manufacture were unenthusiastic about the qualities of the cisterns then available. There has apparently been greater realization of the possibilities by water authorities of the value of this type of cistern which has resulted in the production of this Standard. Nine sizes of rectangular cisterns are given, from six to one hundred gallons nominal capacity, together with tests for soundness and water absorption. A table of actual-to-nominal capacities is also given: internal and external dimensions, position of water level and B.S. size number. No stipulations are made as to perforations: purchasers may specify positions and sizes of holes. No stipulations are made as to fittings as these vary so much between one water authority and another, but the same applies equally to the Standard for galvanized cisterns. There is no reference to the weights of the cisterns which obviously are very much greater than those of galvanized steel, but the weight while empty makes a very small proportionate addition to the *dead-weight* of the stored water.

Fireguards for Solid Fuel Fires. The efficacy as a protective appliance of the popular patterns of domestic fireguard against anything more heavy than the lighter articles of clothing is doubtful. As protection from injury through a child falling towards an open fire they are almost useless. Electric and gas fires are now required to be provided with fixed guards, so it seems odd that the most popular and numerous of dangerous heat sources should for so long have been inadequately catered for. This B.S. covers size of mesh and fixings although some difficulties are bound to arise in providing the requisite eyelets in existing fire-surrounds. It is to be hoped that new patterns of frames will become available which will incorporate a more acceptable form of streamlined fixing. The problem is complicated through the requirement that ash shall be removable and the fire refuelled without removing the guard. No standard

Information Digest (continued)

pattern of design has been laid down to satisfy this requirement, manufacturers being allowed to exercise their ingenuity in producing their own answers. A prototype having a hinged front is being made up by the Wire Goods Manufacturers' Association.

Methods of testing the strength of the fireguard are specified and suggestions made as to provision for fixings in new surrounds. Fine mesh screens as spark guards are suggested as additional safety devices for use when the fires are unattended. The committee responsible for this Standard is composed of a wide range of interests, including fire organizations (D.S.I.K. and Fire Offices Committee) Women's Advisory Council on Solid Fuel, representatives of fireguard and fire-surround manufacturers and the Interdepartmental Committee on Accidents in the Home.

● **The Cement Industry. O.E.E.C.** H.M. Stationery Office. Price 4/-.

Recently reference was made in a Digest to a report on the Timber Industry in Europe. Now comes another equally penetrating study of the trends in the cement industry in O.E.E.C. countries. It is divided into four chapters, dealing respectively with (i) Supply Factors and Trends; (ii) Demand Factors and Trends; (iii) Prices; and (iv) Forecast of Future Activity.

The period covered is 1950 to 1955, and in the first chapter are given figures and graphs for cement production compared with industrial production as a whole in the group, and in addition comparative indications of each member country's own cement production. From the former the cement production is seen in graph form to have been rising steeply and steadily, despite a serious setback to general industrial expansion during 1951-2. Consequently cement production now has achieved relatively greater importance as compared with general industry, individual countries ignored. The second graph is even more illuminating, not easier to appreciate through adoption of a logarithmic scale, but it does show that in these five years German cement production has almost doubled, while in Great Britain it has risen roughly one quarter. It would be wrong to presume that this country is necessarily lagging, it is just as likely that German production was, at the beginning of the period under review, getting over the wartime destruction of plants and was beginning to show the benefits derived from lavish foreign aid. Another way of looking at it is that while in 1950 German production was already slightly greater than Great Britain's, it was in 1955 very much greater—18,769,000tons against Britain's 12,714,000. Italy was well on the way to catching up with British production, showing a curve which is more striking than Germany's. Greece and Eire remained static at much the same level up to 1952 when Greek production suddenly rocketted, achieving a higher total than Denmark which has been in a state of decline. Eire also improved in 1952, but much more modestly than Greece.

In Chapter II a graph giving consumption rates shows Turkey as having the most remarkable increase, roughly trebled. The German consumption rate runs practically parallel with the rate of expansion in the industry, but always with a useful surplus for export. The same can be said of British consumption, but Eire has a consumption rate fractionally better in 1955 than in 1950 while changing from being importer to exporter in a small way, Greece has a useful surplus also. As the consumption rate is an index of the development rate of each country, these graphs emphasize Eire's need to attract foreign capital investment, which she is sedulously encouraging.

Chapter III deals briefly with prices over the five years, but not very thoroughly. It seems that France had the greatest rise of those reported. Chapter IV attempts to forecast future output but as few countries appear to be able to look very far ahead this chapter, too, is unsatisfactory. Three years only are given (1956-8), but the only proposals reported are from Denmark, France (2 years), Italy, Switzerland and Great Britain, the last having plans only for 1957 (175,000 additional tons). It is probable that the reason for this scrappy information lies in the remark early in the Report that greater production does not carry with it proportionately greater employment. Larger units resulting from expansion of existing plants do not call for equivalent increases in labour. So it is likely that enlargement piecemeal of existing works is about all that most countries can foresee.

● **The Durability of Reinforced Concrete in Buildings.** National Building Studies Special Report No. 25. H.M. Stationery Office. Price 3/6.

There are current from time to time hair-raising stories about eleventh hour discoveries of gross deterioration of r.c. structures and many of us supervising buildings must wonder what happens to the bases of r.c. columns which are permanently out of sight but subjected to dampness, acids and shifting subsoils.

The Report shows how much residual strength there is in reinforced concrete. One is liable to get in a panic when a corner of a column or beam spalls off, revealing a rusted bar: the photographs in this Report may give us some piece of mind, for there are examples where the main rods have lost all cover yet the buildings have apparently remained upright.

The survey goes back over fifty-odd years and in the particular case examined absolutely no deterioration has taken place if one can accept shrinkage cracks as normal. One point emphasized is that inadequate concrete cover has been the cause of a large proportion of the trouble through allowing weather penetration. When the cover is sufficient and sound there is some etching of the surface due to rain. The greatest test is the large or high vertical surface without breaks or drips. Shrinkage cracks are liable to permit water to enter and cause rusting. One expert has recommended that in such work the minimum cover should be increased from 1in to 1½in. Doubts have been cast on the merits of high alumina cement because examples examined disclosed that the concrete thus made had become much softer and friable than similar work in Portland cement concrete.

The Report is extremely informative and demands study by all who may have occasion to use reinforced concrete. It deals not only with existing structures, their merits and weaknesses, but with remedial and protective measures, both where Portland cement can be used and where other materials have been adopted with success.

Quite the oddest note is on the origin of the now-familiar cement gun. It seems the inventor thought of it when looking for means of mounting the hides of big game he had shot!

● **The Efficiency of Adhesives for Wood.** D.S.I.R. Forest Products Research Bulletin No. 38. H.M. Stationery Office. Price 2/6.

Most people are aware that adhesives which are satisfactory in dry conditions may be useless in damp or wet

conditions. This Report points out that even in dry conditions serious deterioration may take place through ageing. This matter assumes very great importance when contemplating using glued laminations structurally. Inevitably one must ask for how long the structure is going to be able to sustain the design load.

The Bulletin deals mainly with plywoods but refers also to tests on laminated softwood beams. Tests were made in a variety of atmospheric conditions and in undersea use, in this country and in Nigeria, and over a period of years, the tests having been commenced in 1940.

In the plywood tests, some of the results are just what one would expect from the types of glues used but there are two kinds of failure: (i) rotting of the wood and (ii) deterioration of the glue. Most of the failures met in building work lie in the secondary category. For this reason resin-bonded or waterproof plywood is commonly specified in the hope that neither kind of failure will result. And where unstressed plywood is concerned that is probably a safe bet. But plywood is being used in many ways as structural members—in chairs, in gliders, in yachts and in launches, and it is in these uses that the permanence of bond assumes much greater importance.

In structural work, too, laminated wood has some following, rather more in the U.S. than here, so the permanence of the glue line can be of great consequence. Most of the failures in the test pieces employing the reputedly stronger glues—those not susceptible to bacteriological attack—arose from movement of the wood due to variations in the moisture content of the members.

The Report then describes experience in plywood in a light naval craft, using a variety of woods and a number of adhesives. The number of failures in what seemed so promising a field must have been depressing but much knowledge was gained, not least on the value of paint as protection.

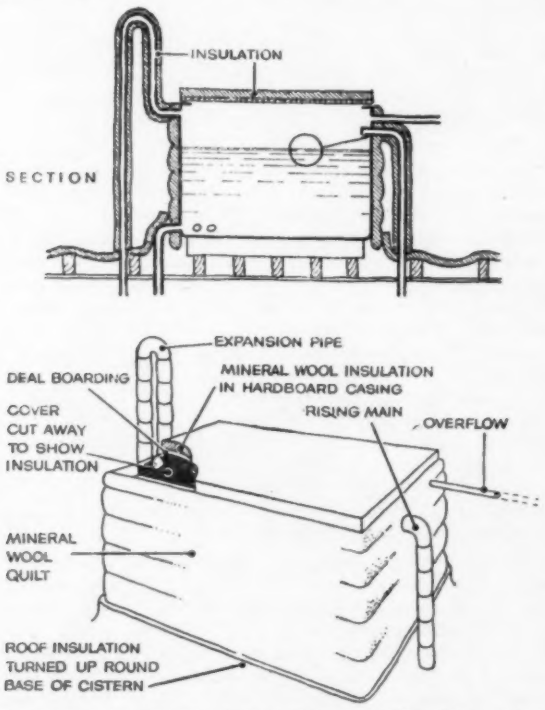


Illustration showing insulation above a ceiling being taken up the sides and over the top of a cold water storage tank. From "Building for Warmth"

TRADE ASSOCIATION PUBLICATIONS

● **Fidor Log.** Fibre Building Board Development Organization Ltd., 47 Princes Gate, London, S.W.7.

The issue of October (No. 4) describes the uses made at London Airport in the three main terminal buildings, mainly for accoustic absorption. Fire-proofed board was largely employed.

A new line in decorated hardboards is described also. Patterns so far developed include tiled, squared and panelled effects, leather grains and reeded, fluted, grooved and slatted treatments.

● **Building for Warmth.** Joint publication by British Electrical Development Association, 2 Savoy Hill, W.C.2; Coal Utilization Council, 3 Upper Belgrave Street, S.W.1 and Gas Council, Murdoch House, 1 Grosvenor Place, S.W.1. Free at Electricity, Gas Showrooms and C.U.C. Information Centres.

The breadwinner and the housewife are the targets of this well-produced booklet but it does not hesitate to use the technical jargon and data (within limits) that the trade and profession are familiar with. It starts with a simple statement on the meaning of thermal insulation (blankets, clothing), then the recommended levels for housing—roughly the Egerton values, hence much higher than those in the Model By-Laws. Diagrams then follow, showing in isometric projection different types of construction, for walls, roofs (pitched and flat) and ground floors. Against each diagram is noted the theoretical insulation value derived from the combination of materials identified in the diagram. Walls are illustrated as 9in solid brick ($U=0{\cdot}43$), 11in unventilated cavity ($U=0{\cdot}30$) 11in with lightweight inner skin ($U=0{\cdot}20$-$0{\cdot}25$), then with wood wool or brandered plastered inner face in the stone and north-country practice where $U=0{\cdot}15$. There may be some argument about $U=0{\cdot}20$ quoted for solid floors without damp-proof membrane. Methods of insulating suspended ground floors are given, employing quilt or double thickness fibreboard under the boards. In passing it might be asked whether the B.R.S. has given its blessing to the latter, without use of building paper under.

Double glazing, draught stripping and lagging to pipework are also mentioned and illustrated. The last diagram illustrates the values of compact planning and centrally placed flues.

The booklet should be extremely helpful to the layman and to many building speculatively and one can only hope that it will bear fruit. What is regrettable is that apart from the methods of insulating the first floor ceiling by quilt or loose fill there is just nothing in the booklet to suggest how non-conforming houses can be brought to a higher standard of external insulation without very heavy expenditure.

● **Asphalt and Coated Macadam in Modern Road Construction.** Bituminous Roads Development Group, Cecil Chambers, Strand, London, W.C.2.

Three forms of road material are described: Rolled Ashphalt, Coated Macadam and Fine Cold Ashphalt. The first must be laid warm, but the others can be laid warm or cold, but the last is not an alternative to the first as it is a "wearing course" only.

The booklet describes the origins of the binders and the characteristics which would normally dictate selection. The use of fluxes and "cut-back" bitumens is also explained, together with the use of bituminous emulsions.

The importance of high-grade aggregate is stressed, for this is the material that gives the road its wearing capacity quite as much as the binder—more so in the case of cold rolled surfaces which rely largely on the interlocking of the aggregate. Suitable aggregates have to be transported

Information Digest (continued)

long distances to the depots. Remoteness of site of road-works from a depot may dictate the use of a cold-rolled macadam but long road hauls are quite possible for hot-rolled material even in wintry weather as has been proved on airfields, though whether cold-rolled surfaces would not have answered equally well is another question.

The need to select the surfacing to suit the base is stressed. Hot-rolled ashphalt must have a stable base—any settlement must result in cracking, requiring heat application for repair. Cold-rolled macadam, on the other hand is more flexible and can be remade at the point of failure by use of cold bitumens.

Speed of construction is another point. By the use of mechanical spreaders the area capable of being laid in one day has been very much increased since pre-war days, reducing the time a road or traffic lane has to be closed.

Reference is made to the provision of non-slip surfaces. It has been customary to look upon an open textured surface as the only type which will satisfy this requirement, in giving mechanical grip to the tyres and in draining away water. Recent research has indicated that a fine-grain is not necessarily deficient in tyre-grip so long as it is composed of innumerable small projections. This effect can be given with or without coated clippings and non-skid qualities remain good so long as the mixture does not result in a polished surface.

TRADE PUBLICATIONS

● **Pitakote Paint.** Allweather Paints Ltd., 36 Queen Street, London, W.C.2.

It was wrongly stated, on page 636 of Information Digest in the A. & B.N., November 8, that this is an emulsion paint. It is, of course, an epikote-based paint. Furthermore, thirteen standard shades of Pitan emulsion paint are now available and several more can be obtained by mixing two standard colours in equal proportions in volume as illustrated in the new Pitan Emulsion Paint shade card.

● **Tenby Electrical Accessories.** S. O. Bowker Ltd., 19-21 Warstone Lane, Birmingham 18.

A handy comprehensive catalogue has been produced of all Tenby accessories and includes a price list, consolidated except for one instance.

The lighting switches are available for flush or surface mounting and a variety of switch plates are offered, decorated or plain, in brown, white, cream and ivory. Plaster-depth moulded boxes for these are also offered, taking up to three switches or presses, the bell-presses being designed to match the fixings for the switches. Plates are available labelled for bell-presses or for switch identification. The 5 and 15amp plugs are designed to simplify wiring by arranging that all leads, including earth, are cut and stripped to identical lengths, the surplus length on the earth being easily coiled in the cable before the terminal. The adjustable "plaster-master" box is illustrated to show how the switchplate fixing alters the fixing in the prefixed box to suit various plaster thicknesses. The customary range of switch sockets is also illustrated, for two and three-pin systems. All types of wiring accessories are also illustrated and listed.

● **Portway Earth-Continuity and Bonding System.** Porter Electrical Products Ltd., 2 North Park Road, Harrogate, Yorks.

Copper strip of special electrolytic quality is employed in this earthing system in conjunction with a wide range of clamps which are designed to ensure effective earthing of installations presenting a variety of contact problems. The copper strips are available in a range of capacities from 50amps to 800amps in five patterns of strip, each type having its capacity embossed on thin continuous tongue throughout the length of the strip. Provision is made for positively connecting a number of low-capacity earth wires to one high-capacity conductor. Intermediate fixing of the earthing strip is assisted by the use of a handpunch which perforates the identification tongue, enabling it to be screwed to walls or bolted to straps.

● **Unimer Tubular Buildings for Agriculture and Industry.** United Merchants Ltd., Walter House, 418/422 Strand, London, W.C.2.

Despite the apparently greater cost of tubular frames compared with those of hot-rolled sections there is a sustained and possibly increased interest in them. The Unimer designs for factory structures have now been on the market for some years and this book tabulates the standard range of frames, together with purlins and sheeting rails, columns, cleats, etc.

The details of column and purlin fixings, suspension rods, ridge cleats, etc., are given and diagrams of standard columns with bases and caps, truss spans with purlin centres and all the data an erector would require on the site, even to the method of setting out bases and checking squareness by triangulation from column to column (e.g., hypotenuse=35ft 1⅞in). While the equal-pitch roof is probably the most common form, provision is made for lattice lean-to trusses which are usable to form lower aisles along the factory sides.

All components required for erecting and sheeting the building are supplied including fixing bolts, gutters and rainwater pipes.

● **Tygan Screening, Blindcloth and Scrim.** Fothergill & Harvey (Sales) Ltd., Harvester House, Peter Street, Manchester 2.

Three booklets describe the features of these products. The screening is made entirely from polyvinyl yarn and is claimed to be virtually rotproof, whether from damp or chemical action, while highly resistant to stretching. Apart from industrial uses it is being adopted as fly-screens for both wood and metal windows, permitting good ventilation and having good transparency. Blindcloth is made for roller blinds and is more opaque than the screening although allowing a fair degree of through ventilation. It is available in colours, plain or striped. Screens, under the trade name of "Tyglas" are available for use in a number of applications, including incorporation in bitumen—or rubber-emulsion roofing. Being made from glass and not p.v., the characteristics differ considerably, the screen being fireproof, with good heat resistance. The screen is made in a number of widths including those used for pipe wrapping.

● **Fluorescent Lighting Fittings.** Strong Electric Corporation (Great Britain) Ltd., Whyteleafe, Surrey.

Fluorescent light fittings are illustrated in this booklet mainly for industrial use. They range from the exposed tube on a metal batten to fully enclosed vapour-proof patterns which have perspex hoods and stoved steel battens. Other open patterns have perspex and stoved or vitreous enamelled hoods. Decorative perspex open and closed patterns are also offered. These fittings are designed to take tubes from 4ft to 8ft in length according to style selected. The "Pitlite" wall mounting pattern for inspection pits is available for 3ft, 4ft and 5ft tubes.

Factory for Messrs. George Angus & Co. Ltd. (Oil Seals Division) on the main Coast Road at Wallsend, near Newcastle upon Tyne. Architects: S. W. Milburn and Partners.

My *dear* fellah! I can't credit it.

Credit what?

This new Angus factory in Northumberland.
Glass from ground level to roof
so they tell me. Inside too. Screens...
partitions and so on... acres of 'em.
Even the dam' boiler house...

Reed Millican again?*

Who else!

* ..ARTISTRY IN RM GLASS

TELEPHONE: NEWCASTLE 28383

Water Supply and Frost Precautions

THE demands for water increase constantly. Undoubtedly industrial demands have grown quite terrifically in recent years and at the same time the constantly rising standard of hygiene in domestic spheres is such that more water is called for in that direction also. The replacement of the slums, together with the improvement of much existing domestic property, a major task in the near future, seem certain to increase further this demand for water. These increasing needs are providing many Water Undertakings with problems such as the seeking of additional sources of supply and in the finding of capital necessary to finance new pumping stations, reservoirs, filtration plant and distribution mains in these days of restrictions of capital expenditure.

A circular put to the Water Authorities by the Ministry of Housing and Local Government* indicates very obviously that the Minister is becoming worried about water supplies and in consequence is pressing very hard for the speeding up of amalgamations of supply undertakings to, as the circular says, "permit the most effective use of water resources in the country and to provide a reliable service supplying at an economic cost the quantity and quality of water that consumers need". The circular continues by suggesting that in modern conditions these aims can hardly be achieved unless Water Undertakings are large enough to develop the local sources to the best advantage, to finance and supervise major capital works and for the employment of expert full-time staff for the safe and economic conduct of the Undertakings.

Since, due to the nature of the country, natural water supplies fall into a number of reasonably well-defined areas it would seem advantageous that there should be large Undertakings administering the available water from each of these areas, thus the amalgamations should be beneficial both from the point of view of ensuring adequate supplies and for capital raising and even more for administrative reasons. For those who have a responsibility to provide water supplies in buildings, such as the architect, sanitary engineer and plumber, and to manufacture materials, fittings and components, there would seem to be an added advantage in having only a relatively few large organizations with whom to deal as this will limit the variety of the demands that have to be met, many of which are based on whims and fancies of particular engineers, and thus simplify production for installation needs. The basing of local Water By-laws on the Ministry of Housing Model By-laws by many water authorities has already gone far towards creating fairly standard rules between supply authorities, but if these authorities could be further reduced to, say, about 50 instead of the existing 1,000 and their Regulations were standardized, as far as the variations in the nature of the water permit, there should be even greater simplification of the articles to be manufactured, while installations could be designed to suit most areas.

The Minister has asked Water Undertakings to give immediate consideration to his Circular and has expressed the hope that substantial progress will be made in the next twelve months. The Circular explains the various possible methods of re-grouping and the procedure to be adopted. It should be appreciated that the Minister has power, under Section 9(2) of the Water Act, 1945, to make compulsory orders, but he is obviously hoping he will not have to take such drastic action.

On this subject of Regulations made by Water Authorities one keeps hearing, from architects in particular, complaints that the Regulations are restrictive (see ABNER in the A. & B.N. of November 8), but unfortunately those who complain seldom seem to state at all clearly what points in the Regulations cause them real difficulty. If these difficulties could be made better known, perhaps the necessary changes in the By-laws would be made. Broadly, the Regulations, which it is understood now mainly follow Model By-laws Series XXI, do not seem to be unduly restrictive and moreover seem, on the whole, to be administered leniently; if, as they should, the Regulations are to prevent thoroughly bad installations and to prevent those who install from using materials and compliances which would fail, due often to the nature of local water, they may need to be somewhat restrictive, but surely this is desirable restriction from the point of view of the building owner or occupier. The main complaint, of which I hear, is the unwillingness of some water authorities to accept flushing valves although there now seem to be satisfactory forms of this apparatus; perhaps if a B.S. were to be prepared covering it, the authorities might more willingly accept its installation.

Frost precaution seems to have loomed extremely large in the publications in the building field during the last month. No less than three different pamphlets from different sources have appeared, one of which is in fact a corollary of one of the others. Firstly, there was the issue of B.S. Code of Practice CP 99.† Secondly, the Ministry of Housing and Local Government issued Circular No. 57/56, entitled "Frozen pipes" (H.M.S.O., price 6d), which suggests that owing to the heavy scale of damage in the early months of last year the Water Undertakings should amend their By-laws to make certain references to CP. 99 and to provide for the installation of draining taps in all systems. The third publication is Ministry of Works Leaflet No. 41 (H.M.S.O., 4d), entitled "Frost precautions for household water supply", which very strangely appears to be based not on the B.S. Code of Practice but the Cambridge Water Authority's Code of Practice.

In the Minister's circular he not only suggests that the administration of Water By-laws could, with advantage, be tightened up to reduce damage due to frost, but that the Water Undertakings would be assisted if local arrangements could be made with the Building By-law Authorities for them to be kept informed of the approval under Building By-laws of plans which involve installing, replacement or renewing water or sanitary fittings. The circular draws attention to the advice given on the subject of frost precautions in Appendix G of the Technical Appendices to the Housing Manual, 1949, and the Memorandum on Thermal Insulation issued as Circular No. 19/53. He further draws attention to the use of polythene pipes for cold water services suggesting that there is little risk of frost causing them to fracture and therefore they might be more widely used, particularly to serve outside water closets, wash-houses and similar buildings. Attention is also drawn to the fact that less damage was done in houses where combination tanks had been fitted and where separate hot and cold tanks were next to one another than in houses where the feed cisterns were in the roof space or otherwise removed from hot water cisterns. To advocate the use of combination tanks seems rather doubtful as the amount of water storage is small and unless cold fittings are supplied directly off the main it is still necessary

* Circular No. 52/56, Re-grouping of Water Undertakings, H.M.S.O., price 4d.

† B.S. CP 99, "Frost Precautions for the Water and Sanitary Services in Buildings", B.S.I., 2 Park Street, London, W.1, price 2s 6d.

Water Supply and Frost Precautions

to have a storage tank. Personally I do not favour fitting taps or ball valves diretly to the main on account of the very varying pressures with which these pieces of apparatus have to deal and in addition, it is very desirable to have storage within each building to take account of variations in the supply and the possibilities of break down in supplies.

It is gratifying to note that the Minister makes a reference to the responsibility of tenants. He points out that if tenants do not keep the house reasonably warm, or leave it empty for a long time without draining the system, damage is bound to occur. He recommends that housing authorities might consider issuing (it does not say how to insure it will remain or be read) a printed card to be kept in some prominent position telling the tenants of the precautions which they should take in frosty weather, where the stop-valve can be found, how the system can be drained, what precautions should be taken with the boiler. An appendix is attached which indicates the extent of damage revealed in a survey of existing houses and some suggestions for reducing the risk of damage in existing houses.

The Ministry of Works Advisory Leaflet is very clear and combines and broadly repeats the information given in many other publications on this subject. It does, however, include a group of notes for householders, but whether M.O.W. Advisory Leaflets ever reach householders seems very problematic. The advice they give to householders is not particularly useful and could have been much better. It seems very possible that the householder may decide that there is likely to be hard frost on a particular night and therefore he turns his water off and in consequence bursts a boiler. A more explanatory leaflet, with suitable interesting and amusing drawings, which could be distributed through the many women's organizations in this country would have a much better chance to achieve the desired purpose. I am not greatly enamoured of a suggestion that the roof space is a bad place for water pipes and cisterns. It is only, surely, a matter of giving adequate protection to the roof space or to the installations within the roof space to overcome any difficulties. To put water tanks below the upper floor ceiling reduces the head of water available at all first-floor fittings quite seriously and can be rather a nuisance. There could have been much more stress also on the use of internal stack pipes and the one-pipe system to guard against frost difficulties.

CP. 99, which is the document to which reference is to be made in Water By-laws, says little which has not already appeared in other Codes of Practice, but merely aims to bring together information previously somewhat widely distributed in other codes. It contains the essential information, but might with advantage have been even more comprehensive.

DUTCH UNCLE

Industrial Notes

● The 1957 B.I.F. at Castle Bromwitch, Birmingham, will run from May 6 to 17 and will include several products which, in previous years, were shown at the now defunct London section. New bookings have already reached 78 per cent of the 1956 final total of new firms.

● British Plaster Board (Holdings) Ltd. have declared a semi-annual dividend of 3¼ per cent actual less tax on their £1 Cumulative 7 per cent Preference Shares to holders on the register at 5 p.m. on Friday, November 30, 1956, payable on December 31, 1956. They have also declared an Interim Dividend of 5 per cent actual, less tax, for the year ending March 31, 1957, payable on January 4, 1957.

● Hale & Hale (Tipton) Ltd. announce a net profit for the year ended August 4, 1956 of £30,808 compared with £28,596 for the previous year. A final Ordinary dividend of 17½ per cent is proposed.

● Crabtree Electrical Industries Ltd. announce a net profit for the year ended July 31, 1956, of £119,392, which shows a decrease of £10,367 on the results of the previous year. A final dividend of 12½ per cent has been proposed for the Ordinary shares.

● Sanders & Forster Ltd., of Thames Works, Hertford Road, Barking, Essex, have just completed and shipped four standard steel storage buildings to Credito e Inversiones de San Miguel Inc., of Puerto Rico. The buildings, each measuring 200ft long by 60ft wide, were supplied complete with steel framework, asbestos roof sheeting and ventilators and perspex rooflights. The value of the order was $50,000 and this firm has now supplied over one million sq ft of standard steel buildings since 1955.

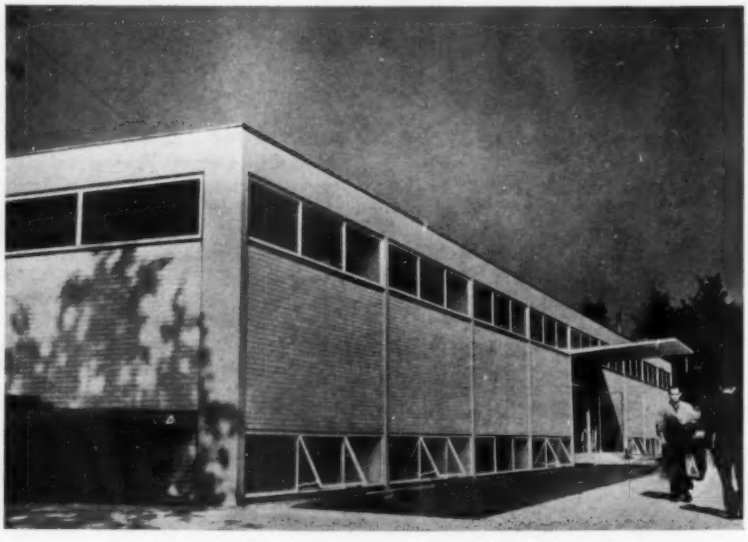
● Mr. A. G. Stewart, chairman and general managing director of Stewart's & Lloyds Ltd., has been appointed a part-time member of the Iron and Steel Board.

● Mr. J. S. Skinner, managing director, has been appointed chairman of Remington Rand Ltd.

● Mr. David C. Randall has been elected to the position of Technical Director of Pariparn Paints Ltd.

● Mr. W. T. Wren has been elected chairman of Allied Ironfounders Ltd.

One of the new buildings extending the Franke & Heidecke factory, Brunswick, Germany, where the Rolleiflex camera is made. The Architect is Professor Dr. Kraemer. Photograph by courtesy of R. F. Hunter Ltd.



"It come orf in me 'and, mum..."

DOVER DESIGN
Door Furniture

A design to enhance the contemporary interior. The Dover range includes mortice locksets and latchsets and mortice furniture with lever handles or knobs. Standard finishes — chromium-plated, Im. B.M.A. or Florentine Bronze, special finishes available on request.

Our sympathy's entirely with you, Mrs. B. Some people cheerfully spend a small fortune on redecorating, yet positively seem to enjoy living with antiquated locks and door furniture, cracked and stained fingerplates, rusty postal knockers, and so on. But the more enlightened 'furnish' their doors as well — refitting with elegant and enduring Yale door furniture chosen from an impressive range of designs and finishes. The Dover design is an example.

Where there's a door there's a need for YALE

REGISTERED TRADE MARK

DOOR FURNITURE
MASTER KEYED SUITES
DOOR CLOSERS
LOCKS

The Yale & Towne Manufacturing Company · British Lock & Hardware Division · Willenhall · Staffs · England

NEW PRODUCTS

In this feature are reviewed new lines introduced to the building industry for the first time and additions or improvements to existing ones. Any advantages claimed for a product are from information supplied by the manufacturer

A swan-neck jib extension is now supplied for the Staffa 3-ton petrol or diesel driven mobile crane, Fig. 1. It provides a clear lifting height of 23ft at an outreach of 7ft 9in, and the jib is operated by means of hydraulic ram. Makers claim that maximum safe working load of the Staffa 3 is 2 tons with a single fall and 3 tons with double fall. Road speed 10 m.p.h.

*Chamberlain Industries Ltd., Staffa Works, Leyton, London, E.*10. *Leytonstone* 3678.

★

The Parwinac translucent, flexible door, Fig. 2, is made from P.V.C. It is claimed that the panels are resistant to chemicals, including petrol and paraffin and are unaffected by weathering. The panels are grained so as to break up the outline of objects on the far side, thus affording a certain degree of privacy. It is also claimed that they will not discolour with age unless exposed to continuous temperatures over 60 deg C. Approximate sizes available are up to 4ft, W. by 8ft H., or from 4ft to 6ft W. up to 7ft H.

Parker, Winder & Achurch Ltd., Broad Street, Birmingham, 1. *Midland* 5001.

★

The multi-purpose electric heater, Fig. 3, designed primarily for airing cupboards, has many applications. It measures 19½in long by 5½in wide, at feet, has a consumption of 122W and an output of 420 B.Th.U/Hr. The nickel chrome element is enclosed in steel tube with meshed steel outer guard. Finish: bronze stove enamel.

Hurseal Ltd., 229 *Regent Street, London, W.*1. *Regent* 1051.

★

The Robin fire, Fig. 4, is designed for the burning of all types of solid fuel. It has a low drop front and is available in sizes 16in and 18in. To vary the air flow, the ashpit door, hinged at the top, is adjusted to several set openings by means of special tool. The bottom grate is of cast iron and side bricks are supplied as standard; cast iron cheeks may be substituted if preferred. Gas burner and deepening plate are optional extras and eight different colour finishes are available.

Warrington Light Castings Co. Ltd., Warrington. Warrington 1113.

★

A new range of anodized aluminium door and window fittings, of Continental origin, is being distributed in this country under the trade mark of P. & E. There is a nylon bushing and sleeving between handle or knob and plate or rose on the door furniture. The nylon bushing is also applied to casement stays and other fittings to prevent metal to metal contact.

Group Sales Ltd., 1A *Broughton Street, London, S.W.*8. *Macaulay* 3765.

★

P.H. foil is a bright, hard tempered, aluminium foil of 0·0016in thickness. It is an insulating material which the makers say has several applications. It may be laid over attic joists, fitted below rafters (or in a new house on top of the rafters), for ground floor insulation, or placed behind radiators. It is supplied in rolls 2ft wide by 300ft long and may be fixed by staples or drawing pins.

P. H. Thermal Products, Westgate, Baildon, Yorks. Shipley 54835.

★

T. & W. Farmiloe Ltd. announce that in 1957 they will be marketing two additional "Nine Elms" siliconised paints, eggshell finish and Faromat. This means that there will be three siliconised finishes available, gloss, eggshell and flat. It is claimed that, owing to their powers of resistance to water and condensation, the two new finishes are suitable for kitchen and bathroom decoration. The new "Nine Elms" colour card will be available in January, 1957, and will give full details of additions to and deletions from the colour range.

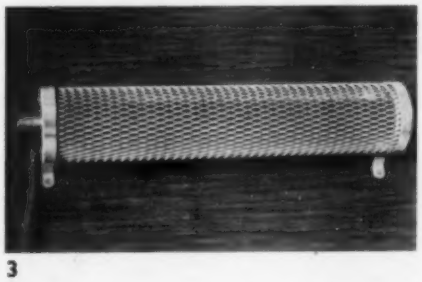
*T. & W. Farmiloe Ltd., Rochester Row, Westminster, London, S.W.*1. *Victoria* 4480.

★

Special perspex dome light units have now been designed as an integral part of Halcrete interlocking wood wool slabs. They have been produced for use with both flat and pitched roofs and fix in ceilings or roof linings of the slabs, spanning the distance between purlins or main beams. The ends of the slabs abutting the timber kerb of the dome light rest on a 2in by 2in angle. The interlocking channel is packed with timber and the joint stiffened by a 2in by 2in

1

2



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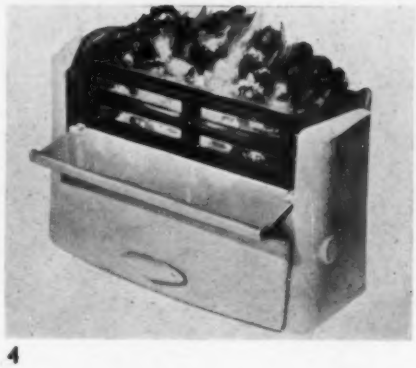


4

New Products

angle screwed into the kerb and self-tapped screwed into the channel edging. A ½in screed is laid on the wood wool slabs and is formed into a fillet at the angle between the dome light kerb and the wood wool slabs. The built-up bituminous roofing is carried straight up and over the top of the kerb. The underside of the slabs may be plastered, painted, distempered or left untreated. Overall lengths of units available are between 6ft and 10ft and dome lights in many sizes between 28in by 30in and 76in by 45in, but special sizes are made to order.

Halcrete (Precision) Panels Ltd., Stockley, West Drayton, Middlesex. West Drayton 2051.

★

A feature of the new Willow fireclay twin sink and cabinet unit Fig. 5, is the waste fitting, which has a perforated receptacle for scraps. Waste outlets to the two sinks are positioned vertically at the back. It is made in one size only, 42in by 21in by 10in and in standard finishes of white, ivory and green. Pink, blue, primrose and turquoise can be supplied at extra cost. The wooden cabinet is fitted with a shelf on one side and storage room on the other. Two sliding doors are provided and a bucket filling mixer fitting is available if desired.

Johnson Fireclay Co. Ltd., Excelsior Works, Cliffe Vale, Stoke-on-Trent. Stoke-on-Trent 22173.

★

The Rayburn domestic oil-fired boiler, Fig. 6, has been designed to supply hot water and some central heating in the medium-sized home, i.e., to heat a thirty gallon cylinder plus 100 sq ft of radiation surface. It has a natural draught vapourizing burner and all parts are contained within the enamelled cabinet. Makers recommend Domesticol fuel oil and claim that the Rayburn has an 80 per cent thermal efficiency and will burn for eight hours on one pint of oil when idling. Thermostatic control is provided.

Allied Ironmongers Ltd., 28 Brook Street, London, W.1. Grosvenor 8941.

★

The new Baker oil space heater, Fig. 7, has an output which can be set at any point between 25,000 and 3,600 B.Th.U/hr. Consumption of paraffin varies from 1·9 pints/hr at high setting to 0·32 pints/hr at low setting. A vaporizing pot type burner is enclosed by combustion chamber which acts as a heat exchanger. The heater, which provides both convection and radiant heating, has louvred outer casing and rear flue outlet. Safety mechanism, to cut off oil supply, is provided and heat output is regulated by control knob. The top cover may be raised to expose a hotplate for boiling kettles, etc. Manufactured from steel and finished in grey or bronze the appliance measures 2ft 8in H. by 1ft 5¾in W. by 1ft 7¼in D. Two models are available, A having 2½ gall fuel tank with level indicator and tap, and B with lower flue outlet for fitting into existing fireplaces and intended for use with bulk storage tank situated outside the building.

P. W. Baker & Sons (Sales) Ltd., Windmill Road, Sunbury-on-Thames, Middx. Sunbury-on-Thames 456.

★

The H.O.40 grill is designed for back-bar catering. It has two switches, each with a pilot light and the elements consist of five 750-watt panel units arranged to give all over heat even at half intensity. Dimensions are 27in long by 12in high by 11¼in wide. The grilling area is 21in by 10in and the appliance has a loading of 3·75kw. Front finished in mottled grey vitreous enamel and sides and back in plain grey vitreous enamel.

The General Electric Co. Ltd., Magnet House, Kingsway, W.C.2. Temple Bar 8000.

★

With reference to their advertisement which appeared on inside front cover of A. & B.N., October 25, the makers of "Superlative" paint have asked us to state that the paint which has been withdrawn in its favour is "Luxol I" and not the recently introduced "Luxol" One Coat Enamel.

British Paints Ltd., Portland Road, Newcastle-upon-Tyne, 2. Newcastle 25151.

★

Experimental Siliconate D 3033 is an alkaline solution of sodium methyl siliconate. It is claimed that it lines the surface pores of masonry with a thin water-repellent film which does not change the appearance or breathing characteristics of the masonry. Makers recommend it as a treatment for brickwork and concrete where the use of organic solvent solutions of silicone resins is not acceptable and on Clipsham and Portland limestones.

Midland Silicones Ltd., 19 Upper Brook Street, London, W.1. Grosvenor 4551.

★

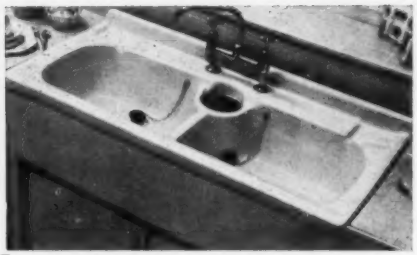
Stick-a-seal, the self-adhesive, plastic foam draught and dustproofing weatherstrip is now available in 10ft packs and in addition, the 20ft roll will shortly be marketed in the following colours: black, green, brown, grey, and white.

Sealdraught Ltd., Chandos House, Buckingham Gate, London, S.W.1. Abbey 3571.

★

A new safety aid, designed to improve visibility of warning signs, is now being marketed by this company. It is a Scotchlite reflective sheeting which can be used on existing signs and will, it is claimed, be illuminated brightly by even a low-powered hand torch in the event of power failure. The sheeting is supplied in rolls of any colour. The reflective power of the sheeting is stated to be 185 times greater than that of white paint, by torchlight.

Minnesota Mining and Manufacturing Co. Ltd., 167 Strand, London, W.C.2. Temple Bar 6363.



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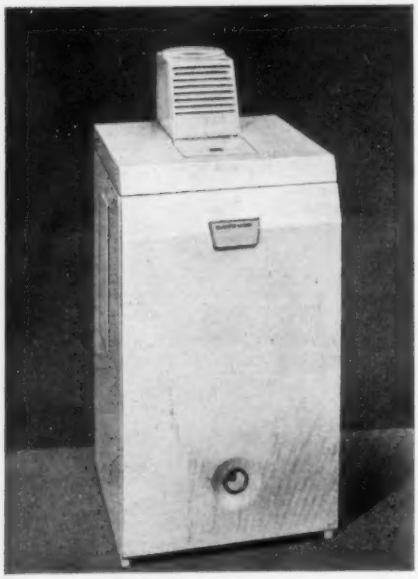

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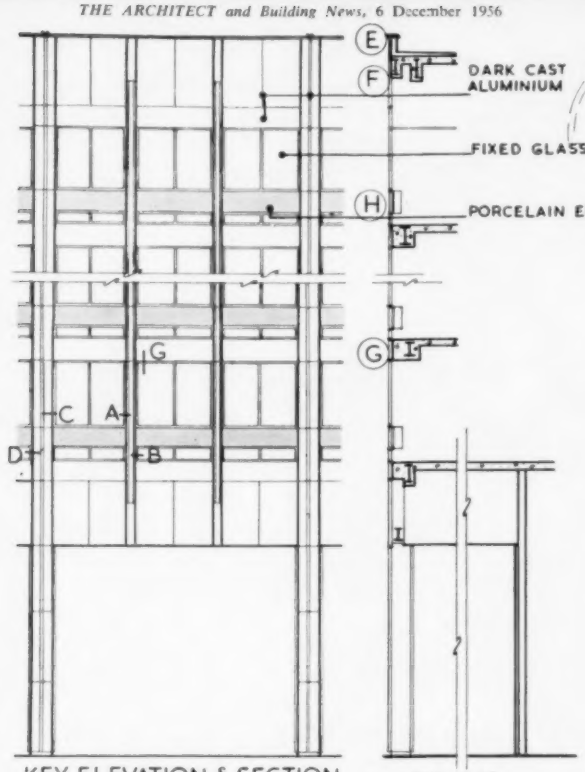
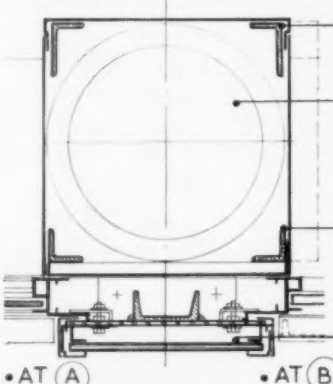


DARK CAST ALUMINIUM

FIXED GLASS

PORCELAIN ENAMEL

KEY ELEVATION & SECTION • 1/16"-1'0"



TWO 2½"X1½"X¼" L'S, FLOOR TO CEILING

AIR DUCT

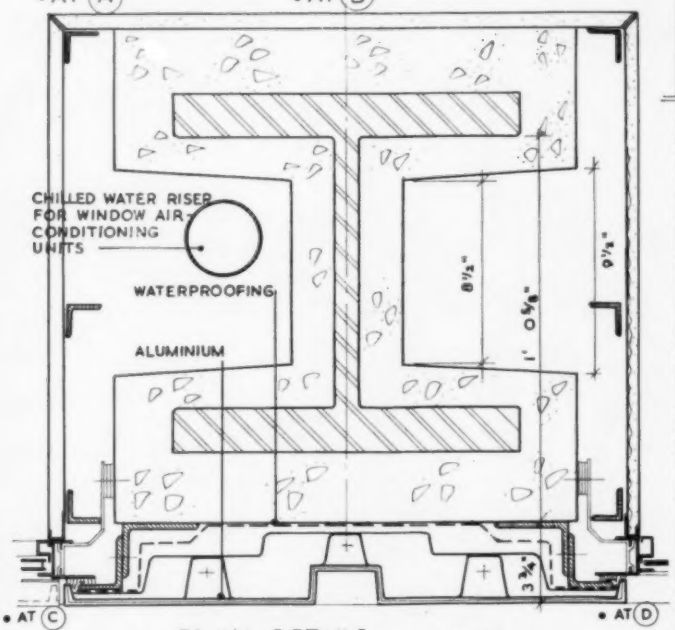
DARK ALUMINIUM CAST SPANDREL

SPANDREL WATERPROOFING

TWO 1½"X1½"X¼" ANGLES FLOOR TO STOOL

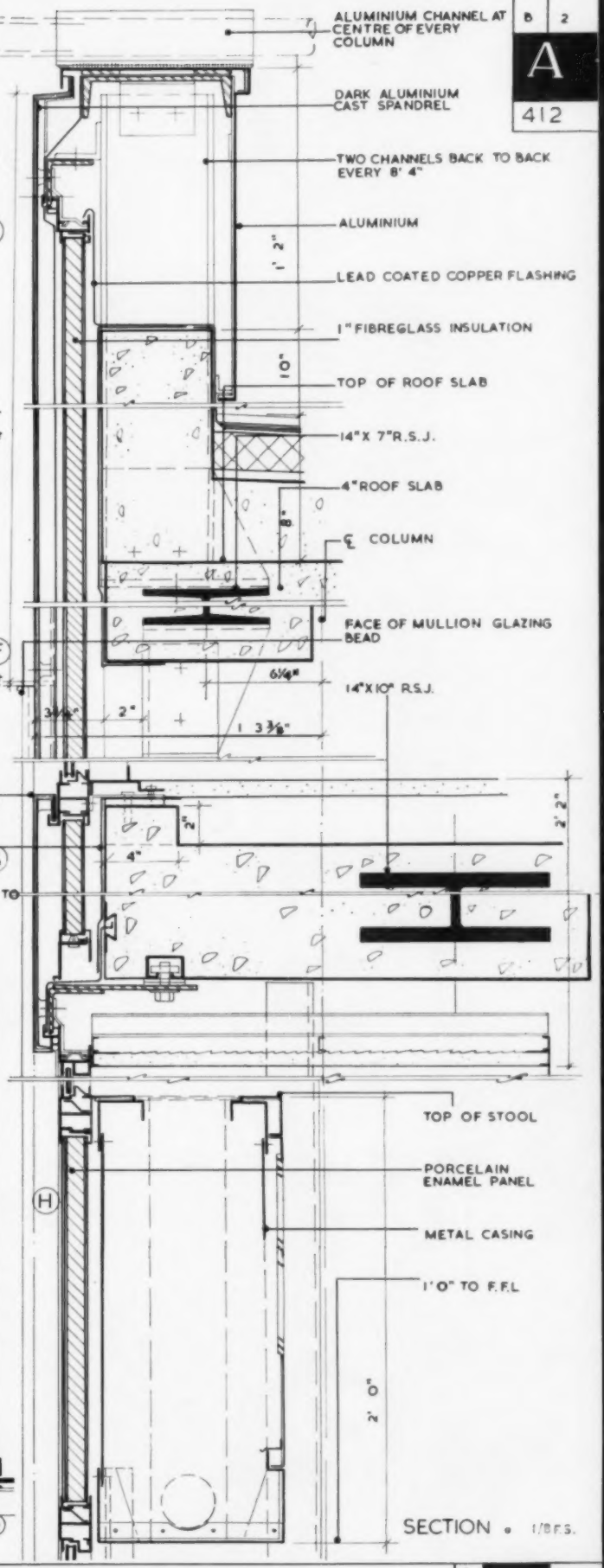
PORCELAIN ENAMEL PANEL

• AT (A) • AT (B)



• AT (C) • AT (D)

PLAN DETAILS • 1/8 F.S.



ALUMINIUM CHANNEL AT CENTRE OF EVERY COLUMN

DARK ALUMINIUM CAST SPANDREL

TWO CHANNELS BACK TO BACK EVERY 8' 4"

ALUMINIUM

LEAD COATED COPPER FLASHING

1" FIBREGLASS INSULATION

TOP OF ROOF SLAB

14"X 7"R.S.J.

4"ROOF SLAB

℄ COLUMN

FACE OF MULLION GLAZING BEAD

14"X10" R.S.J.

TOP OF STOOL

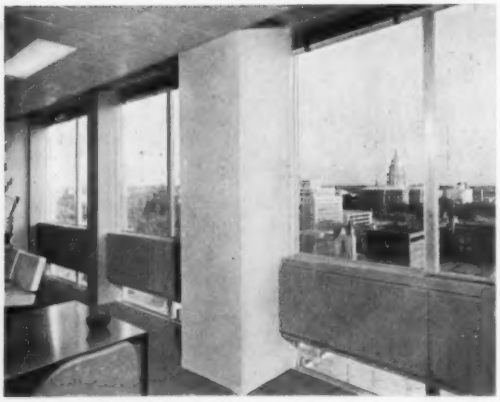
PORCELAIN ENAMEL PANEL

METAL CASING

1'0" TO F.F.L

SECTION • 1/8F.S.

WALL DETAIL. MILE HIGH CENTRE. DENVER. COLORADO. U.S.A. • I. M. PEI & ASSOCIATES FOR WEBB & KNAPP INC.



WALL DETAIL
MILE HIGH CENTRE, COLORADO

ARCHITECTS :
I. M. PEI & ASSOCIATES

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CONTRACT • NEWS •

*Notes below give basic data of contracts open under locality and authority which are in a bold type. References indicate : (a) type of work, (b) address for application. Where no town is stated in the address it is the same as the locality given in the heading, (c) deposit, (d) last date of application, (e) last date and time for submission of tenders. Full details of contracts marked * are given in the advertisement section.*

OPEN

BUILDING

ALCESTER R.C. (a) 12 houses at Wilmcote. (b) Council's Surveyor, Council Offices, Alcester, Warwickshire. (c) 2gns. (e) December 29.

* * *

ALCESTER R.C. (a) 10 houses and sewage disposal plant at Dunnington. (b) Council's Surveyor, Council Offices, Alcester, Warwickshire. (c) 2gns. (e) December 29.

* * *

BECKENHAM B.C. (a) 6 bungalows on the Beck Lane estate. (b) Borough Engineer, Town Hall. (c) £2. (e) January 2.

* * *

BIRMINGHAM C.C. (a) Supply and erection of 145 tons of fabricated steelwork for an eight-storey block of flats, at Church Road, Perry Barr, Birmingham, 22B. (b) City Engineer, Civic Centre, Birmingham, 1. (c) 2gns. (e) December 19.

* * *

BRIDLINGTON B.C. (a) 23 dwellings on Sewerby Road. (b) Francis F. Johnson, 16 High Street. (c) 3gns. (e) January 7.

* * *

BUSHEY U.C. (a) 8 houses, 24 houses. 26 flats in five blocks, and a block of three bungalows at Little Bushey estate. (b) Council's Engineer, Council Offices, Rodulph Road, Bushey, Herts. (c) 3gns. (e) December 29.

* * *

CAERNARVONSHIRE C.C. (a) Erection of a house at Waunfawr. (b) County Architect, County Offices. (c) 2gns. (e) December 9.

* * *

CARDIGANSHIRE C.C. (a) Erection of a new school house at Penuwch, nr. Tregaron& (b) County Architect, County Hall, Aberayron, Cards. (c) 1gn. (e) December 10.

* * *

CHESTER. (a) Alterations and additions at Crewe Divisional Police headquarters, for transport accommodation. (b) E. Mainwaring Parkes, County Hall. (c) 2gns. (d) December 11. (e) January 8.

* * *

CRANBROOK R.C. (a) One block of four bungalows and a pair of bungalows together with drainage and siteworks at Court Stile. (b) Council's Architect, Council Offices, Hill House, Cranbrook, Kent. (c) 2gns by cheque, payable to Council. (e) January 8.

* * *

CUMBERLAND E.C. (a) Erection of a new secondary school at Dalston, nr. Carlisle. (b) County Architect, 15 Portland Square, in writing, together with particulars of large contracts carried out. (d) December 10.

* * *

DURHAM C.C. (a) Additions, etc., at Jarrow grammar school, additional classroom at Benfieldside junior school, and adaptations at Wingate Community and Youth Centre. (b) County Architect, South Street. (d) December 8.

DURHAM C.C. (a) Erection of Barnard Castle grammar technical school, Dunston Hill modern, Middleton St. George modern, Sedgefield modern and Sherburn modern. (b) County Architect, South Street. (d) December 8.

* * *

ECCLES B.C. (a) 8 flats at the junction of Fairless Road and Barton Lane. (b) Borough Engineer, Town Hall Annexe, Irwell Place. (c) 2gns. (e) December 17.

* * *

EIRE—CO. KERRY. (a) Proposed factory at Killorglin, for Messrs. Tailteann Sports Products Ltd. (b) Thomas C. Whelan, National Bank Chambers, 1-2 Cavendish Row, Dublin, or Patrick J. F. O'Sullivan, 5 Denny Street, Tralee. (c) 15gns. (e) December 12.

* * *

ESSEX C.C. (a) Erection of new milking parlour and covered yard at Bretts Farm, Romford Road, Aveley. (b) County Land Agent and Valuer, 69 Duke Street, Chelmsford. (e) December 12.

* * *

ESSEX C.C. (a) Complete internal decorations at Chelmsford Moulsham secondary school—boys' and girls' departments, estimated to cost approx. £7,000. (b) County Architect, County Hall, Chelmsford, Essex. (o) December 8.

* * *

ESSEX C.C. (a) Erection of Basildon The Fairhouse primary school, at an approx. cost of £86,000. (b) County Architect, County Hall, Chelmsford, Essex. (d) December 15.

* * *

ESSEX C.C. (a) Erection of Hornchurch Cranham Engayne primary school, at an approx. cost of £86,000. (b) County Architect, County Hall, Chelmsford, Essex. (d) December 15.

* * *

ESSEX C.C. (a) Erection of Brentwood Hutton Brookfield junior school, at an approx. cost of £49,000. (b) County Architect, County Hall, Chelmsford, Essex. (d) December 15.

* * *

H.M. FORESTRY COMMISSION. (a) One pair of houses together with sewerage plant at Glyn-Tarrell site, adjacent to the New Inn, off the Brecon-Merthyr Road. (b) T. Alwyn Lloyd and Gordon, 6 Cathedral Road, Cardiff. (d) December 11.

* * *

KIRKBURTON U.C. (a) 6 bungalows at The Crescent. (b) Ian E. Mercer, Town Hall. (c) 2gns. (e) December 17.

* * *

LANCASHIRE C.C. (a) Erection of wireless workshops at Hutton Police headquarters. (b) County Architect, P.O. Box No. 26, County Hall, Preston, quoting Ref. A/MG. (d) December 11.

* * *

LINCOLN C.C.—PARTS OF KESTEVEN. (a) Adaptations and extensions to Welbourn Manor to form old people's home. (b) County Architect, County Offices, Sleaford, Lincs. (d) December 12. (e) January 14.

* * *

LIVERPOOL C.C. (a) Erection of electricity sub-station at Fazakerley Cottage Homes, Longmoor Lane. (b) City Engineer, Municipal Buildings, Liverpool, 2, in writing. (e) December 8.

* * *

LIVERPOOL C.C. (a) Erection of a science laboratory and dining hall extension at Holly Lodge High School, Liverpool, 12. (b) City Architect, Blackburn Chambers, Dale Street, Kingsway, Liverpool, 2. (c) 2gns for each contract, payable to City Treasurer. (e) December 8.

LONDON—LEYTON B.C. (a) 23 maisonettes and 19 flats in Dyson Road, Leytonstone, E.11. (b) Borough Engineer, Town Hall, E.10. (c) 2gns. (e) January 9.

* * *

LONDON—WALTHAMSTOW B.C. (a) 17 bungalows and 13 flats at Priory Court, Countess Road, Walthamstow, E.17. (b) Borough Architect, Town Hall. (c) 2gns. (e) December 24.

* * *

MANCHESTER CORPORATION. (a) (1) Alterations and extensions to Burnage grammar school; and (2) additional classrooms, etc., to Ryder Brow secondary school. (b) City Architect, P.O. Box 488, Town Hall. (e) December 29.

MANCHESTER CORPORATION. (a) Erection of district depot and staff houses at Church Lane, Moston. (b) City Architect, P.O. Box 488, Town Hall. (e) December 8.

* * *

MANCHESTER CORPORATION. (a) Additions and alterations at Briscoe Lane primary school. (b) City Architect, P.O. Box 488, Town Hall. (e) December 8.

* * *

NEWCASTLE UPON TYNE C.C. (a) 36 flats and maisonettes on the Longbenton estate, Unit 4, Section "M". (b) City Architect, 18 Cloth Market, in writing. (e) December 13.

NEWCASTLE UPON TYNE EDUCATION COMMITTEE. (a) Erection of a primary school on a site at Kenton. (b) Director of Education, City Education Office, Northumberland Road, Newcastle upon Tyne, 1. (c) 5gns by cheque, payable to Education Committee. (d) December 12. (e) January 21.

* * *

NEWCASTLE UPON TYNE C.C. (a) New Assembly hall at Welbeck Road secondary school. (b) Director of Education, City Education Office, Northumberland Road. (d) December 8. (e) January 5.

* * *

NORFOLK E.C. (a) (1) One classroom at Great Bircham voluntary school; (2) one classroom at Denver voluntary school; (3) four classrooms at East Dereham secondary school; (4) handicraft and domestic science block at Diss grammar school; (5) one classroom and sanitary improvements at North Elmham voluntary school; (6) three classrooms at Hellesdon infants' school; (7) additional accommodation at King's Lynn girls' high school; and (8) three classrooms and adaptation of gymnasium at North Walsham girls' high school. (b) Chief Education Officer, County Education Office, Stracey Road, Norwich, stating which projects builders would like to tender. (d) December 12.

* * *

N. IRELAND—ANTRIM E.C. (a) Proposed alterations to gymnasium at Ballymena technical school, Ballymena. (b) Crofton G. Dalzell, 6 Bath Street, Portrush. (c) £5. (e) December 13.

* * *

N. IRELAND—LONDONDERRY. (a) Alterations at Kilcronaghan school. (b) W. and M. Given, 1 Waterside, Coleraine. (e) December 18.

* * *

OLDHAM E.C. (a) Erection of new secondary modern school at Breezehill. (b) School's Architect, Education Office, Union Street West. (c) 2gns. (e) January 5.

* * *

ORRELL U.C. (a) 14 houses on the Kitt Green site. (b) Council's Engineer, Council Offices, Orrell Post, Wigan. (e) December 10.

* * *

PETERLEE DEVELOPMENT CORPORATION. (a) (1) 61 dwellings at Acre Rigg 111B; and (2) 208 dwellings at Acre Rigg 111C and D. (b) General Manager, Shotton Hall, Castle Eden, Co. Durham. (c) 2gns. (e) December 21.

* * *

PLYMOUTH C.C. (a) Proposed additions for Civil Defence Rescue Set at Paradise Road school, Stoke. (b) City Architect, Seymour Road. (c) 3gns, payable to Corporation. (d) December 10.

* * *

PONTYPOOL U.C. (a) 42 terrace houses at Trevethin Neighbourhood Unit, Phase 2, Scheme "B". (b) Council's Architect, Market Buildings, Pontypool, Mon. (c) 2gns. (e) December 11.

* * *

PORTSMOUTH C.C. (a) 94 houses at Parkhouse Farm, Leigh Park. (b) City Architect, 1 Western Parade. (c) £1. (d) December 8.

* * *

READING B.C. (a) Erection of Alice Jenkins Aged Persons' Home in Liebenrood Road. (b) Borough Architect, Town Hall. (c) 2gns by cheque, payable to Corporation. (e) January 4.

ROCHESTER C.C. (a) 35 houses at Warren Wood Redevelopment, second stage. (b) City Surveyor, 66 Maidstone Road, Rochester. (c) 2gns. (e) December 31.

* * *

ROTHBURY R.C. (a) 12 houses at Thropton, together with necessary roads and sewers. (b) Council's Clerk, Court House.

* * *

SCOTLAND—GLASGOW CORPORATION. (a) Several works in connection with the erection of 30 houses at Area "N", Barholm Square, Garthamlock. (b) Architectural and Planning Department, 20 Trongate, Glasgow, C.1. (e) December 20.

* * *

SCOTLAND—PERTH AND KINROSS JOINT C.C. (a) Alterations and additions to Perth junior academy. (b) Messrs. Harvey and Scott, 2 Lynedoch Place, Glasgow, C.3. (d) December 14.

* * *

SCOTLAND — RENFREW C.C. (a) Several works in connection with additional accommodation at Barrhead high school. (b) County Clerk, County Buildings, Paisley, specifying the particular work to be tendered for. (d) December 8.

* * *

SEVENOAKS R.C. (a) 4 pairs of houses, 2 blocks of bungalows and 4 blocks of flats at Sundridge. (b) Council's Engineer, "Inglewood", Oak Hill Road. (c) 2gns. (d) December 13.

* * *

SHREWSBURY B.C. (a) 14 dwellings and a caretaker's house with community room at Meadows estate. (b) Borough Surveyor, Guildhall. (c) 2gns. (e) December 17.

* * *

SHREWSBURY B.C. (a) 14 houses at Ditherington Redevelopment, Part One. (b) Borough Surveyor, Guildhall. (c) 2gns. (e) December 17.

* * *

SOUTH CAMBRIDGESHIRE R.C. (a) Two blocks of four houses and one pair of bungalows, including outbuildings, external services, paths and fences, at Church End estate, Arrington. (b) Council's Architect, County Hall, Hobson Street, Cambridge. (c) 2gns. (e) December 22.

* * *

SOUTHEND-ON-SEA B.C. (a) Proposed new lavatory accommodation at Hamlet Court infants' school, Hamlet Court Road, Westcliff-on-Sea. (b) Borough Architect, 30 Alexandra Street. (c) £2. (e) January 2.

* * *

SOUTHEND-ON-SEA B.C. (a) Proposed extension to kitchen at Hamlet Court junior school, Hamlet Court Road, Westcliff-on-Sea. (b) Borough Architect, 30 Alexandra Street, Southend-on-Sea. (c) £2. (e) January 2.

* * *

SPENNYMOOR U.C. (a) Proposed alteration works within the Town Hall. (b) Council's Clerk, Town Hall. (d) December 8.

* * *

ST. ALBANS C.C. (a) 40 houses on London Road estate. (b) City Engineer, 16 St. Peter's Street. (c) 3gns. (e) December 11.

* * *

STAFFORDSHIRE C.C. (a) Carrying out minor alterations to Darlaston Nurses' Home, 2 Station Street. (b) Council's Clerk, County Buildings. (e) December 17.

RHYMNEY U.C. (a) Adaptation, etc., of "Plasgyn" High Street to provide Council Offices. (b) W. T. Bebb, Esq., Manor House, Bank Square, Chepstow, Mon. (c) 2gns. (e) December 19.

* * *

TYNEMOUTH B.C. (a) Erection of (Group 1) 20 houses at Beadnell Avenue; and (Group 2) 8 dwellings at Blackthorn Crescent. (b) Borough Surveyor, 16 Northumberland Square, North Shields. (c) 2gns each group. (e) January 15.

* * *

WALSALL B.C. (a) Erection and completion of a new boiler house, plant room and laundry at Gala Baths, Tower Street. (b) Borough Engineer, Council House. (c) 2gns. (e) December 18.

WEYMOUTH AND MELCOMBE REGIS B.C. (a) 12 flats at Chapelhay. (b) Town Clerk, Municipal Offices. (d) December 14.

* * *

WOLVERHAMPTON. (a) A block of six shops with six maisonettes over, and two blocks of four garages, construction of a service road, at Westcroft Avenue, Underhill Lane estate. (b) Borough Engineer, Town Hall. (c) 2gns. (d) December 13, in writing.

* * *

WORCESTERSHIRE C.C. (a) Erection of an infants' school at Pershore. (b) County Architect, 14 Castle Street, Worcester. (c) 5gns. (d) December 12.

PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.

TROWBRIDGE U.D.C. (1) 126 houses and site works. (2) Studley Green. (3) T. Holdoway and Sons Ltd., of Westbury, Wiltshire. (4) £201,225.

* * *

LONDON. (1) Eight-storey block of offices. (2) New Street, Fetter Lane, E.C.4. (3) A. Roberts and Co. Ltd., 79 Eccleston Square, London, S.W.1. (4) £300,000.

* * *

BASILDON DEVELOPMENT CORPORATION. (1) 638 dwellings. (2) Barstable neighbourhood. (3) Leslie and Co. Ltd., Kensington Square, London, W.8. (1) 345 dwellings. (2) Vanse neighbourhood. (3) Leslie and Co. Ltd. (1) 235 dwellings. (2) Fryerns neighbourhood. (3) W. and C. French Ltd., Buckhurst Hill, Essex.

* * *

GATWICK. (1) First stage of terminal buildings. (2) Gatwick Airport. (3) Gilbert-Ash Ltd., 2 Stanhope Gate, London, W.1. (4) £100,000.

* * *

NEWPORT (MON) B.C. (1) Secondary school. (2) Hartridge. (3) W. J. Nicholls Ltd., 6-8 St. Paul's Road, Gloucester. (4) £164,000.

* * *

WORCESTERSHIRE C.C. (1) Extensions to school. (2) Stourport. (3) Spicers Ltd., Worcester. (4) £55,188. (1) Junior school. (2) Droitwich. (3) C. C. Lampett, Malvern Link, Worcs. (4) £52,501.

* * *

SOUTHPORT B.C. (1) High School for Girls. (3) R. J. Barton and Sons Ltd., Formby, Lancashire. (4) £217,661.

* * *

PURLEY U.D.C. (1) 100 houses. (2) Old Lodge estate. (3) J. Cartwright Ltd., 9 Streatham High Road, London. S.W.16.

* * *

YORK. (1) Large block of offices and shops. (2) Davygate and New Street. (3) F. Shepherd and Sons Ltd., Blue Bridge Lane, York.

* * *

LONDON. (1) Block of offices. (2) 7-17 Jewry Street, E.C.2. (3) Richard Costain Ltd., 111 Westminster Bridge Road, London, S.W.1.

* * *

SHIPLEY B.C. (1) 102 houses. (2) Coach Road. (3) Direct labour. (4) £146,000.

* * *

INCE-IN-MAKERFIELD. (1) School, for managers of C.E. school. (3) P. Hamer Ltd., Park Street, Swinton, Manchester. (4) £98,379.

* * *

NORTHANTS C.C. (1) Secondary school. (2) Deanshanger. (3) H. C. Janes Ltd., 189 High Town Road, Luton. (4) £101,000.

* * *

WINDSOR R.D.C. (1) 62 houses. (2) Ascot. (3) A. S. Wells (Old Windsor) Ltd., Sunninghill, Berks. (4) £91,000.

* * *

CROYDON. (1) Showrooms and offices. (2) Surrey Street. (3) Myton Ltd., Park Street, London, W.1, and Hull. (4) £200,000.

ROOFS revolutionary

EVERY Architect knows that roofs, in most cases the largest single continuous surface in a building, demand the most careful attention. In the past, the Architect chose the roof structure and would frequently have to conceal its unsightly appearance from within. Although this great sound reflecting surface also provided the easiest path for heat losses, *additional* cost made the use of thermal insulators or sound absorbants a luxury.

Not until Thermacoust Limited first introduced 2" Channel Reinforced Fine Grain (2" CRF) Roof Slabs, could roof structure, thermal insulation, sound absorption and fine textured finish be provided by *one* low priced material.
2" CRF has revolutionized roof construction. In one cheap unit all the following qualities are combined :—

- **Low first cost and simplicity of construction.**
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  saving inches of brickwork.
- **Lightness of weight (7 lbs./sq. ft.),**
  saving tons of supporting structure.
- **Thermal insulation (U=0.23 BTh.U),**
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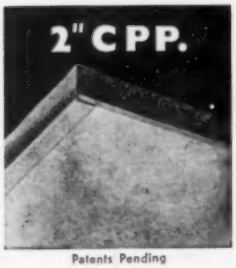
- **Sound absorption (0.85 at 500 cps.).**
- ★ **Availability ex stock in large quantities.**



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And now we offer, where no sound absorption is required the 2" Channel Reinforced Preplastered Thermacoust (2" CPP) with the following *additional* advantages.

- **Smooth finish.**
- **Highest possible light reflection.**
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T.21

DEATH OF A HERO . . .

Thetis, mother of that great Greek warrior Achilles was warned that her son was doomed to an early death. Hoping to avert this fate she took the babe and dipped him into the dark waters of the River Styx to ensure that no weapon could harm him.

Later, destiny called him to the Trojan war where his valour in battle made him respected by ally and foe alike. One day, angry at the death of his dearest friend at the hand of Hector, leader of the Trojans, he led his army against the enemy, drove them back within the walls of their city and slew Hector in single combat.

But it is said that the death of the Trojan angered the god Apollo who guided an arrow to the one vulnerable spot on Achilles' body—that part of the heel by which his mother had held him when dipping him in the River Styx. Not all his valour, not even the new armour fashioned for him by Hephæstus, god of metal workers, could save him. His one weak spot had been found—the Achilles' tendon, in fact!

Has your protective barrier of fencing an Achilles' tendon too? Abnormal corrosion in many industries and coastal resorts speedily finds out the vulnerable places and untold damage can be caused. But now, PENFOLD have produced a Chain Link Fencing that offers real resistance because it is manufactured from STAINLESS STEEL. It is the extra special fencing for the extra special job—and PENFOLD are proud of the fact that they are the first to offer this great innovation to Britain. If you are interested we shall be happy to send you full details.

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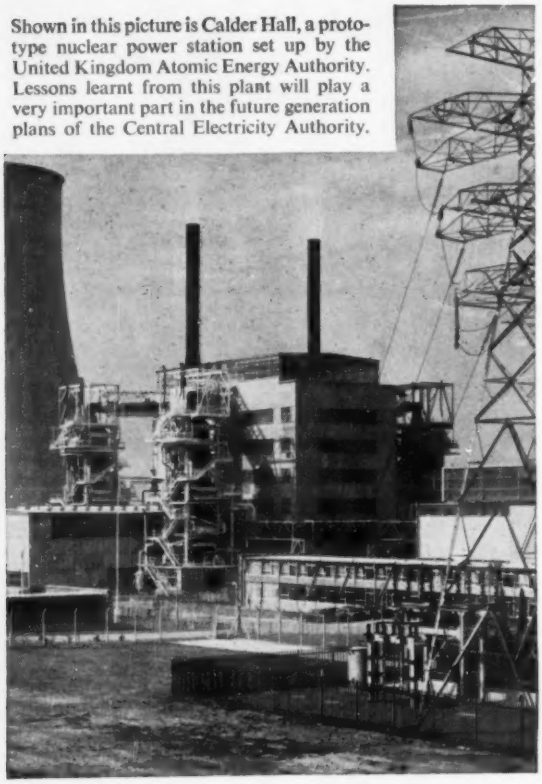
Telephone: Watford 2241 *Telegrams:* "Penfold Watford"

Electricity from Nuclear Energy

Shown in this picture is Calder Hall, a prototype nuclear power station set up by the United Kingdom Atomic Energy Authority. Lessons learnt from this plant will play a very important part in the future generation plans of the Central Electricity Authority.



The growing need for power

Britain today is making an all out drive for increased production, and as the pace quickens, so does the demand for power. In 1955, about one fifth of the national coal output was used to generate electricity. The demand for power doubles every ten years and by 1965 40% of the estimated national coal output that year will be needed to keep up with the demand. Nuclear energy will do much to make up the difference between the need for electric power and the supply of home produced coal.

Work will be started on the first two nuclear power stations in 1957, and by 1965 a total of 12 nuclear power stations, employing both gas- and liquid-cooled reactors, will be supplying current to the Grid. The rapid developments of the past 18 months have shown that the potential capacity of the earlier stations will be practically double the original estimate; this means that by 1965 we should be getting from nuclear power alone electricity equal to 10 to 12 million tons of coal.

As the demand for electricity grows, nuclear energy will become more and more important in supplying the power upon which the economic future of the country so largely depends.

CEA

OFFICIAL ANNOUNCEMENTS

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APPOINTMENTS

ARCHITECTURAL and Engineering Draughtsmen. The Civil Service Commissioners invite applications for a wide variety of permanent and pensionable posts in many different fields of Government work.

Age at least 20 on June 1, 1956.

Candidates must possess O.N.C. or equivalent or higher qualification, but for certain posts evidence of appropriate technical training and experience accepted in lieu.

Every candidate must have had appropriate training of not less than three years and some practical workshop or drawing office experience.

Starting salary (London) from £475 at age 20 up to £685 (women £672) at age 28 or over. Maximum of scale (men) is £790. Women's scales are being raised to reach equality with men's by 1961. Salaries somewhat lower in provinces. Promotion prospects.

5-day week in general.

Further particulars and application forms from Civil Service Commission, Scientific Branch, 30 Old Burlington Street, London, W.1, quoting S68-69/56. Application forms should be returned by December 31, 1956. [2914

BOROUGH OF BARNSTAPLE

APPLICATIONS are invited for the following posts in the Borough Engineer's and Surveyor's Department.

(a) Architectural & Surveying Assistant (Temporary) A.P.T. Grade III (£640—£765 plus 2½%).

(b) Engineering Assistant (Permanent) A.P.T. Grades I and II (£530—£675 plus 2½%).

The commencing salary in each case will be fixed according to qualifications and experience.

Applicants for (a) must possess a recognised professional qualification and be competent to make surveys, take levels, and assist in the preparation of plans for extensive clearance and redevelopment schemes.

Applicants for (b) should have completed a course of professional training and be competent to make surveys, take levels and assist in the preparation of and carrying through schemes normally dealt with in a Local Authority Engineer's and Surveyor's Department.

The appointments will be subject to the National Joint Council's Conditions of Service, the Local Government Superannuation Act and the passing of a medical examination.

Housing accommodation will be available if required.

Applications stating age, qualifications, details of experience and accompanied by copies of three recent testimonials to be sent to the Borough Engineer & Surveyor, The Castle, Barnstaple, by Friday, December 21, 1956.

Canvassing directly or indirectly will disqualify.

F. J. BROAD,
Town Clerk.

The Castle,
Barnstaple.
30/11/56. [2926

BRITISH STANDARDS INSTITUTION

ARCHITECTURAL Assistant is required in the Modular Co-ordination Section. Office experience is not essential. The assistant would be required to prepare detail drawings connected with Modular Co-ordination in Building.

Apply in writing, giving full details of age, training and experience to the Establishment Officer, British Standards House, 2 Park Street, London, W.1. [2929

COUNTY BOROUGH OF EAST HAM

ASSISTANT PLANNING OFFICER

GRADE II £609 17s 6d—£691 17s 6d. Borough Engineer's Department. Plus London Weighting. Salary above minimum and subsistence may be paid subject to conditions. Details and form from Town Clerk, E.6. Closing date December 28, 1956. [2927

LONDON COUNTY COUNCIL

ARCHITECT'S DEPARTMENT

VACANCIES for Architects Grade III (up to £987), and Architectural Assistants (up to £818), for widespread construction programme which includes houses, blocks of flats, schools of all types, and various public and industrial buildings.—Application forms and particulars from Architect (AR/EK/A/3), The County Hall, S.E.1. (1189). [0007

APPOINTMENTS—contd.

HER MAJESTY'S OVERSEA CIVIL SERVICE

ARCHITECT, PUBLIC WORKS DEPARTMENT, JAMAICA

TO prepare designs, plans and working drawings, etc., under direction of Chief Architect.

Appointment is either permanent and pensionable or on contract for 3 years in first instance. Salary £820—£1,200 p.a. Starting salary according to experience. Contract gratuity payable £100—£150 p.a.

Free passages for officer, his wife and children up to a total of 5 persons. 1¼ months leave for each completed year of resident service. Government quarters not provided.

Candidates must be A.R.I.B.A. Write Director of Recruitment, Colonial Office, London, S.W.1, stating briefly age, qualifications and experience, quoting BCD 112/32/06. [2916

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POSTAL tuition in any subject or for full syllabus of Inter. Final or Special Final, including Professional Practice, Revision Courses arranged to meet individual requirements. Courses also available in general educational subjects for G.C.E., R.I.C.S., Preliminary, etc.

THE ELLIS SCHOOL OF ARCHITECTURE

(Principal: A. B. Waters, F.R.I.B.A.) 103D Old Brompton Road, London, S.W.7 (KEN 4477), and at Worcester. [0789

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ARCHITECTURAL APPOINTMENTS VACANT

ARCHITECTURAL Draughtsman required for eminent Architect's Office with interests throughout the Country. Superannuation scheme and Luncheon Club. Apply in writing to Cotton, Ballard & Blow, 5 Baker Street, London, W.1. [0022

ARCHITECTURAL Assistant wanted, to work on new, but quickly developing system of prefabrication for schools, halls, hospitals etc. Interesting work with excellent prospects. Offices in S.E. London area, write stating age, experience and salary required to Box 5447. [0023

ARCHITECTURAL APPOINTMENTS VACANT—contd.

ARCHITECTURAL Assistant required of post intermediate R.I.B.A. standard, capable of preparing sketch schemes, working drawing and details. Interesting work, good salary and prospects. Reply giving full particulars of experience etc., to Henry A. Ellis & Son, F/L.R.I.B.A., M.I.Struc.E., 6 Wind Street, Swansea. [2904

ARCHITECTURAL Assistant, intermediate standard, required by City firm. Good salary and prospects.—Box 5467. [2905

ASSISTANT Architects required for varied practice. City centre. R.I.B.A. and Intermediate Standard. Apply in writing to Oxley and Bussey, 91 Pinstone Street, Sheffield, 1, Yorks. Envelope to be endorsed "Assistant Architect". [2895

URBAN DISTRICT COUNCIL OF EAST BARNET

APPLICATIONS are invited for the following permanent appointments :

(a) Assistant Architect—Grade A.P.T. III (£656 to £784 2s 6d per annum).

(b) Architectural Assistant—Grade A.P.T. II (£609 17s 6d to £691 17 6d per annum).

The above salaries will be increased by London Weighting of £20 to £30 per annum according to age.

Housing accommodation will be provided for appointment (a) if necessary.

Conditions of Appointment and Forms of Application, returnable by December 29, 1956, may be obtained from the Engineer and Surveyor, Town Hall, Station Road, New Barnet, Hertfordshire. [2919

ASSISTANT Estimator/Supervisor required to assist in preparing estimates and final accounts for suspended ceilings, etc., including site supervision. The position would be permanent and pensionable. Five-day week. Luncheon vouchers provided. Salary according to qualifications. Apply to Executive Engineer, Expanded Metal Co. Ltd., Burwood House, Caxton Street, S.W.1. ABBey 7766. [2921

BASIL SPENCE & PARTNERS require architectural assistants immediately in their London office.—Write stating salary required to 48 Queen Anne Street, W.1. [2918

FREDERICK GIBBERD has some interesting work and requires architectural assistants with office experience. Salary £600–£750 according to experience.—Write, giving full particulars, to 8 Percy Street, London, W.1. [2922

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(a) Assistant Town Planning Officers.
(b) Town Planning Officers.

REQUIRED for duty with the Ministry of Local Government and Housing. Contract appointments for two tours of 18-24 months in first instance. Salary ranges (a) £1,180-£1,530 p.a., (b) £1,600-£2,020 p.a., plus a temporary addition of £29 15s p.a. Gratuity £12 10s for each month of satisfactory service on completion of contract. Free passages for officer, wife and up to three children under 13. Quarters at low rental. Generous home leave on full salary. Candidates must be A.M.T.P.I. or have recognised exempting qualification and in addition either A.R.I.B.A., A.M.I.C.E., A.R.I.C.S. or A.M.I.Mun.E. Write Director of Recruitment, Colonial Office, London, S.W.1, giving briefly age, qualifications and experience, quoting (a) or (b) BCD.163/13/03. [2920

VERNER REES, LAURENCE & MITCHELL require Senior and Junior Architectural Assistants to work on Educational Schemes.—Apply: 51 Queen Caroline Street, W.6. RIVerside 5905. [2923

SITUATIONS VACANT

MAY & BAKER LTD., Dagenham, Essex, require a Building Draughtsman, (aged 22/30), in connection with Factory alterations and extensions. Applicants must have a sound knowledge of building construction. Apply initially in writing, quoting reference No. 3, to the Personnel Officer [2911

QUANTITY Surveyor. Firm of Builders have vacancy with good prospects for man proficient in Taking Off, Billing and Pricing from Plans and Specifications and in completing Interim and Final Accounts. Please write stating previous experience and salary required to Edwin Fox & Co. Ltd., Evington Street, Leicester. [2928

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SITUATIONS WANTED

ENGINEER, over 65, willing to undertake plan copying, detailing or any other drawing office work. London district.—Box 5564. [2917

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EFFICIENT service at moderate fees to Architects, Surveyors and Builders. Preparation of plans and specifications and Bills of Quantities. Competitive estimating from Bills and plans.—Surveyor, 1 Royston Avenue, Wallington, Surrey. Wallington 3065. [2824

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FOR Sale.—Agamatic boiler £20; 60-gallon tank, complete with lagging, immersion heaters and switches £5; all in excellent condition.—Willis, 29 Parkside Gardens, Wimbledon, S.W.19. Tel. WIM 7789. [2925

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JOINTLESS composition flooring in attractive colour range—quotations free.—Full particulars from the Liotex Asbestos Flooring Co. Ltd., 3, Corbetts Passage, London, S.E.15. (Dept. A), Bermondsey 4341-2-3. [0622

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Printed in Great Britain for the publishers, Iliffe and Sons Ltd., Dorset House, London, S.E.1, by Gibbs and Bamforth Ltd., St. Albans, Hertfordshire.

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(VOLTAGE-OPERATED)

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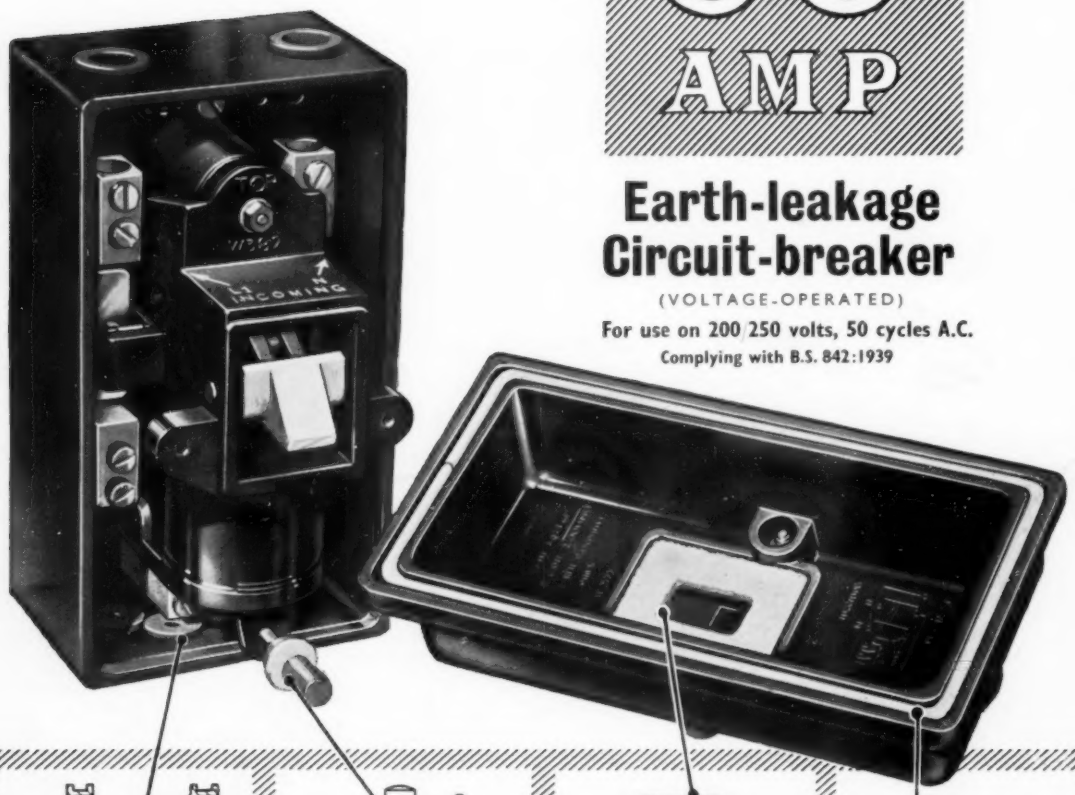
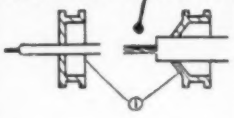
Complying with B.S. 842:1939





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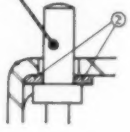

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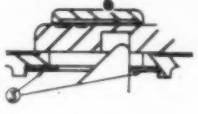

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